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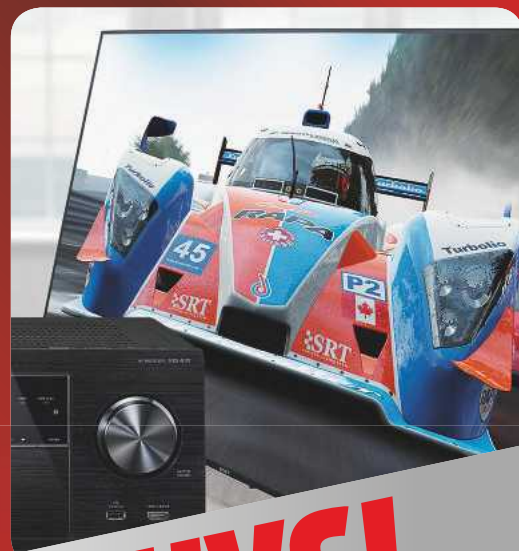
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Choice



Amazon vs Netflix
4K video services go head-to-head, p30

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Win a Cambridge Audio Blu-ray player! p98

WELCOME

Once again we're bringing an end to the year with our Yearbook special, celebrating the hardware and software that blew us away over the past twelve months. Our reviews section (beginning on p39) covers everything from 4K and Full HD TVs to amps, projectors, Blu-ray players, speakers, soundbars, headphones and more. So if you're looking for new kit, this is the place to start.



Meanwhile, **our annual Movie Awards showcases the Blu-rays that deserve a place in any disc collection**, from the astonishing image quality of

Tomorrowland to the mesmerising SFX of *Jurassic World*. And there's the small matter of Disc of the Year to sort out...

We're not all about physical media, though. This issue we also throw Amazon Video and Netflix into the rumble pit to see which streaming service is a home cinema must-have. Head over to p30 for the verdict.

Mark Craven
Editor



MENU



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The UK's most experienced TV tester cut his teeth as an early HCC staffer



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Adrian Justins:
Made his name as the editor of *What Video & TV* and *What Home Cinema*

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WIN!
A Cambridge
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worth £900!
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BULLETIN

→ **News Highlights** **OPTOMA** Projector specialist unveils new ultra short-throw model **SKY Q** 4K-ready next-gen set-top box revealed **SONY** First impressions of new pro-grade 4K/Ultra HD laser beamer **BANG & OLUFSEN** Danish brand unleashes its most expensive speaker yet **NEWS X10** The hottest news stories in bite-sized chunks **SPECTRE** Bond is back on Blu-ray! **AND MUCH MORE!**

Big is beautiful

Loewe Reference UHD TVs → www.loewe.tv

Luxury tech marque Loewe has given its Reference 4K/Ultra HD TV range a boost with the addition of new 75in and 85in models. The Reference 75 and Reference 85 flatscreens both utilise HDMI 2.0 with support for HDCP 2.2 and HEVC decoding, and employ a 120W eight-speaker audio system (which can also work as the centre

channel in a 5.1 setup). Other high-end tricks include an integrated 1TB HDD and motorised stand options. The two models are available in a choice of Aluminium Black, Aluminium Silver, High-Gloss White and Dark Gold finishes, with prices starting at £9,000 for the Reference 75 and £15,000 for the Reference 85.



HCC ONLINE...

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Coming up short

Optoma GT5000 → www.optoma.co.uk

Struggling to work out how to fit a projector into your living room? Optoma has introduced the GT5000, a new ultra-short throw model which it claims is capable of producing a 100in image from a distance of just 30cm. Priced at a tempting £1,000, the projector packs a 23,000:1 contrast ratio and 3,000 lumens brightness, while a quick response time and an input lag of 33ms hopes to make the device a hit with gamers. Other features of the GT5000 include two HDMI 1.4 inputs, Ethernet and RS232 ports, a 12V trigger and built-in 16W speakers.



Sky reinvents premium pay TV

Next-gen set-top box streams recordings around the house, teases 4K

Sky has unveiled a new premium pay TV platform which it says changes everything. Called Sky Q, it combines satellite reception with IP-enabled streaming, and casually throws in support for 4K.

Andrew Olson, who has led development of the platform since leaving Comcast, told *HCC* that Sky Q reflects how consumers now watch TV. 'We found that people are living a more fragmented life. They have favourite shows and movies, but they couldn't get them everywhere they wanted them. So we came up with this idea called Fluid Viewing, where your favourites can follow you from screen to screen.'

The Sky Q system is built around the Sky Q Silver, a new slim set-top box with 2TB hard drive. Featuring 12 tuners, it allows viewers to record four channels simultaneously, while watching a fifth. Other tuners support PiP viewing and a new breed of networked client boxes, known as Sky Minis. These boxes can stream live channels across a network or over Wi-Fi, along with recorded content from the Sky Q Silver box they're paired to. They have no local hard drives. One Silver STB supports two client Minis.

Enticing features

Users can browse channels, watch and make recordings from any device, or view catch-up and on-demand. The system makes extensive use of metadata for search and recommendations.

The use of IP networking from the Sky Q box to service additional devices puts a nail in the coffin of traditional Sky multiroom.



Andrew Olson: 'We came up with an idea called Fluid Viewing, where your content can follow you from screen to screen'

The new hardware will be accompanied by an app which mimics the Sky Q viewing experience. A new Q Sync feature even allows recordings to be downloaded to a mobile device for viewing away from home.

Sky fibre broadband customers will be offered the Sky Hub, a combination router and powerline device. Sky Q is Apple AirPlay compliant and can be used with Bluetooth-enabled devices for music streaming.

'Over a third of our customers told us that their living room sound system was the best in the house,' explains Olson. 'So we thought we would take this further. AirPlay looks beautiful and sounds fantastic. It's basically a free Sonos for your home.'

The system also comes with a slew of apps, including YouTube and Vevo. More are promised.

The catch is that you will need a new dish LNB to run the service – which means you can't combine Sky Q with existing Sky+ hardware. If you decide to turn away from Sky at some point in the future, you won't be able to swap in a Freesat box without changing the LNB back.

The new LNB brings the entire satellite channel bouquet down to the set-top box for demuxing. 'This means no more failed recordings or clashes,' enthuses Olson.

Preparing for a 4K future?

While the Silver Q box is 4K-capable, Sky has made no announcements about the start of any UHD service beyond hinting that it would offer movies and sport at some point in 2016. While the main Sky Q STB will be able to play 2160p/50 with high-frame-rate football coverage, it's not clear if the Minis will also do this. Indeed, the smart money says they will not.

The satcaster states that Sky Q joins, but does not replace, its existing Sky+ and Now TV family. Launch is queued up for early 2016.

PLAYLIST...

Team *HCC* spins up its disc picks of the month

Inside Out 3D (All-region BD)

A stunning hi-def package for one of Pixar's very best films. It's almost enough to make you overlook Disney UK's decision to ditch a bunch of bonus features from the US release



Jessica Jones: Season One (Netflix 4K)



Netflix digs into the dark underbelly of the 'Marvel Cinematic Universe' with this series about a failed hero turned private detective

The Gift (Region B BD)



Actor Joel Edgerton impresses in this twisting (and twisted) thriller that he also wrote and directed

Aquarius: Season One (Region B BD)



David Duchovny stars as an L.A. cop who comes up against Charles Manson (Gethin Anthony) in this compelling '60s crime drama

Self/Less (Region B BD)



John Frankenheimer's *Seconds* (also available on Blu-ray) gets a glossy makeover with this Ryan Reynolds sci-fi vehicle



EXTRAS...

Small items that could make a big impression

The Art of Horror: An Illustrated History



Split into 10 chapters, each devoted to a different aspect of the horror genre (vampires, zombies, Halloween, Lovecraft, etc.), this stunning £25 hardback serves up over 500 nightmarish pieces of art ranging from pulp magazine covers and classic film posters to original paintings and digital illustrations. A must-own for any horror-head.

Risk: Game of Thrones



In what must surely be the most obvious piece of licensing ever, you can now grab a *Game of Thrones* version of the classic strategy game *Risk* from www.hboshopecu.com for £35. A *Game of Thrones* version of *Risk Deluxe* (£60) is also on the way.

Love: A BFI Compendium



A companion to the BFI's 'Love' season (which runs until the end of December), this 160-page book features 22 essays exploring depictions of love and romance on the screen – including a fascinating piece on silent cinema by former *HCC* staffer Pamela Hutchinson. Yours for £17.

Bringing cinema clarity closer

We get an exclusive hands-on with Sony's monster 4K laser projector

Sony has closed the performance gap between commercial cinema and high-end home theatre. *HCC* was given exclusive access to the brand's new VPL-VW5000ES 4K laser projector, at the trade-only TT (Tomorrow's Technology) Expo, and can confirm that it really does shake up the premium home cinema market.

Measuring a massive 550mm wide and 750mm deep, and weighing 43kg, it's clearly made for projection booths not plasterboard ceilings. Using an extremely bright 5,000 Lumens light source, it also requires a custom-built liquid cooling system. Connections include two HDCP 2.2-compatible HDMI inputs and it can handle 4K 60p signals up to 8-bit 4:4:4 or 12-bit 4:2:2. The standard for consumer Ultra HD is 10-bit 4:2:0.

The projector features two 12V triggers for system control, in addition to IR and RS232. While it comes with a 1.27-2.73:1 throw lens as standard, short-throw glass covering 0.8-1.0:1 can be specified.

In addition to near perfect blacks and amazing contrast, a laser light source offers other benefits. These include long operational life, with a slow linear decrease in brightness to combat colour shifts. And if the colour settings do drift, it also boasts a built-in re-calibration function that assesses how much the PJ has skewed from its original factory calibration.

Singing its praises

Although the VW5000ES uses 4,096 x 2,160 SXRD panels and is HDR-capable, this early sample had yet to be firmware-enabled for HDR. Sony claims an



The projector sports two HDCP 2.2 HDMI inputs (below)



'infinite dynamic contrast ratio' and says the PJ can cope with the full DCI-P3 colour space and the upcoming BT.2020 colour gamut.

Native 4K content on show included clips from *House of Cards*, *The Blacklist* and the recent Sony remake of *Annie*. Colour depth and fine detail were simply astonishing. There's a vivid crispness to its pictures that eclipses any high-end consumer projection system we've seen to date.

The detail in big close-ups of James Spader's face (*The Blacklist*), lensed on a Sony CineAlta PMW-F55 camera, was jaw-dropping. The clarity is such that we could actually make out the cameraman and his on-set lighting rig reflected in Spader's eyes.

While the £50,000 price-tag may be a tad high in the domestic arena, it's actually comparable with other high-end high-brightness home theatre projectors from the likes of SIM 2 and Runco that are limited to 1080p imagery. Small wonder then that custom installers at the TT Expo were forming a line to place orders for this AV behemoth.



Hisense claims its ULED panel rivals OLED for black levels

Hisense launches flagship curved 4K TV

Brand promises a cheaper alternative to OLED with its 'ULED' panel

Chinese TV manufacturer Hisense has launched its first flagship 4K/ Ultra HD screen on these shores.

Hisense's new 65in screen (65XT910) retails for approximately £2,400 and is based around proprietary ULED (Ultra LED) tech, which combines 240-zone local dimming and a direct LED backlight

with a quantum dot panel design for a wide colour gamut. The result is a 'high dynamic contrast' performance with deep blacks that the company says rival those of more expensive OLED TVs, while

'Smart peaking' wizardry allows the LED backlight to boost peak brightness depending on content.

Ready for Netflix

The 65XT910 features a curved design, integrated Freeview HD tuner and four HDMI inputs, two of which are v2.0/HDCP 2.2-enabled. Smart skills include DLNA/USB file playback and on-demand apps, including Netflix 4K. Amazon Video is expected to follow before the year is out. HDR support will be added by firmware update.

The flagship set is available from John Lewis, AO, Richer Sounds, Crampton & Moore and others.

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DIARY

Our calendar ensures that you don't miss out...

→ DECEMBER

21: Snoopy and Charlie Brown: The Peanuts Movie

More than a month after it opened in the US, this film based on Charles M. Schulz's *Peanuts* comic strips hits UK cinemas. And it also gets a revised title – presumably so we don't think it's about actual peanuts. Good grief! www.fox.co.uk

25: Christmas Day!

Wishing everyone a very Merry Christmas from Team HCC – whether you're sitting down to watch the *Doctor Who* special or clockwatching until the Boxing Day sales to pick up an AV bargain...



26: In the Heart of the Sea

Chris 'Thor' Hemsworth stars in this historical adventure about the sinking of an American whaling ship in 1820, which served as the inspiration for *Moby Dick*. Look for it to surface in UK cinemas today www.warnerbros.co.uk.

28: Sinister 2

The disturbing horror sequel comes to Blu-ray and DVD accompanied by deleted scenes, extended 'kill films', a *Making of...* and a commentary uk.eonefilms.com

→ JANUARY

06: CES 2016

The AV industry decamps to Las Vegas today for the start of the world's leading consumer electronics and technology expo www.cesweb.org

08: The Hateful Eight



Get ready for a rootin' tootin' night out as Quentin Tarantino's eagerly-awaited Western hits UK cinemas with all guns blazing. Fingers-crossed that we also get some screenings of the 70mm version of the film www.entertainmentfilms.co.uk

11: The Returned: Series Two

The second series of the cult French supernatural drama crawls out of the grave and onto DVD and Blu-ray. And it's joined by the delayed BD release of the first series, too www.universalpictures.co.uk

21: HCC #256

The next issue of your favourite home cinema magazine hits the stands today packed with hardware tests, features, outspoken opinion and software reviews www.homecinemachoice.com

The big Bang & Olufsen theory

Premium AV brand turns 90, launches a high-end speaker to celebrate



To mark its 90th anniversary Bang & Olufsen has launched an active speaker of immense size, power and cost. A project that began as a desire to make something worthy of the company reaching its ninth decade ended with the BeoLab 90, a product that not only breaks new ground in terms of room calibration, but – at £26,995 per speaker – is the most expensive item ever sold to carry the Bang & Olufsen name. HCC paid a visit to Struer, on Denmark's Atlantic Coast, to check it out.

The floorstanding BeoLab 90 aims to please with an array of no fewer than 18 drivers, powered by 8,200W of amplification. These are seven 300W tweeters, seven 300W mid-range drivers and four 1kW woofers. All the drivers are custom-made in Denmark by Scan-Speak.

The electronics and drivers are shoehorned into a cavity carved out of a single block of aluminium, draped in a floating mesh cover; the final product weighs 135kg and measures 123.5cm high.

It looks mad and is not the sort of thing you can take home in the back of the car from the dealers. And even if you could, professional installation is essential to ensure the acoustic performance is maximised, with the BeoLab 90 able to deliver a 360-degree soundfield optimised for the listeners' position. This is largely due to a new Active Room Compensation (ARC) process that takes Automatic Bass Calibration (ABC), found in the 12-year-old BeoLab 5, one step further.

ABC alters low-frequency output in response to a room's affect on the bass, but as B&O's technology specialist for sound design and product creation Geoff Martin explains, ARC also uses noise cancelling to eliminate

unwanted reflections at higher frequencies.

By using filters in the DSP chipper, the BeoLab 90 also adjusts beam width so that different frequencies, hopefully, arrive at your ears at the same time. 'We want the same energy at all frequencies going towards the side-walls. Our target is constant directivity and we want a constant, narrow beam,' says Martin.

The speaker uses its extra drivers to create additional output as required in response to a room's reflections. The installer will create filter settings for three beam widths covering the sweet spot for single-listener use; a broader setting for when several people are laterally separated; and a setting called Omni mode, which fills the room and is designed for parties. Selection of the mode is done either using a smartphone app, or if using a B&O television screen, the TV's own remote control.

Connectivity is plentiful and comprises the brand's proprietary Power Link, phono, XLR

(fully balanced), USB and coaxial (both 24-bit/192kHz compatible) and a 24-bit/96kHz optical input. DSD is not supported (for now at least) whilst DXD is beyond the scope of the Burr Brown chipset, which maxes out at 216MHz.

In theory you could use a pair of the BeoLab 90s as the front speakers in a surround system (within a complete B&O AV ecosystem) but at £50,000 a pair these speakers are priced beyond the reach of the mass market and are more of a statement of the company's capabilities than a genuine retail product. That said, don't be surprised to see the technology filter down to appear in more affordable products.



This month's top 10 news stories in handy, bite-sized chunks...



1 OLED record-breakers

LG Electronics has installed the world's two largest OLED displays in South Korea's Incheon International Airport. The twin displays measure 13m high and 8m across and are made up from 140 55in curved OLED panels. They were created to showcase the capabilities of the screen technology, with LG Electronics bigwig Ro Se-Young stating: 'the benefits of OLED technology can only be viewed, they cannot be described with mere words.'

2 UHD TVs suck (more energy)

A report from the US Natural Resources Defence Council (NRDC) claims that 4K/Ultra HD TVs use an average of 30 per cent more energy than their 1080p predecessors. In response, the European Environment Bureau (EEB) issued a warning to consumers stating: 'It's clear some UHD models perform far better than others. Shoppers should use the EU energy label sold with all UK TVs to compare models and dodge energy monsters.'

3 Sky Store joins FindAnyFilm

Sky Store is the latest retailer to join FindAnyFilm.com, the website designed to point UK consumers towards legal ways to watch films and TV shows at cinemas, on disc and via digital services. The inclusion of Sky Store means that FindAnyFilm now covers 95 per cent of digital platforms in the market.

4 Betamax finally dead

After 40 years, Sony is pulling the plug on its antiquated VHS-rival and will stop shipping Betamax cassettes in March 2016. The company already ceased production of Betamax recorders back in 2002.

5 Virgin announces price hikes

The cost of Virgin Media's TV and broadband services will be going up in February. The cost of the Big Connection and Big Easy bundles will rise by £3.49 per month, while users of the Big Bang, Big Kahuna and Big Daddy packages can expect to pay an extra £3.99 per month.

6 BBC wields the axe

The BBC's Red Button services are facing the axe as the corporation aims to make £150m worth of cuts in the coming year. The Red Button services replaced Ceefax in 2012 and offer text-based news updates as well as multiple video streams during major sporting and music events. A further saving of £35m will come from slashing the spending on sports rights, while an additional £50m will come from overheads and the previously announced loss of 1,000 jobs.

7 Sony unveils UHD Blu-rays

Sony Pictures has announced its first wave of Ultra HD Blu-ray discs, and it's safe to say that it's a big disappointment. The line-up consists of *The Amazing Spider-Man 2*, *Hancock*, *Salt*, *Chappie*, *Pineapple Express* and *The Smurfs 2*. We guess that *Paul Blart: Mall Cop 2* just wasn't ready in time.

8 Vudu Vision

US streaming service Vudu is now offering a selection of 4K Dolby Vision movies to customers with Vizio's Reference series TVs. Titles including *The Man from U.N.C.L.E.*, *San Andreas* and *Mad Max: Fury Road* are now available in Dolby Vision with Dolby Atmos soundtracks.

9 Arrow goes to Hell again

Arrow Video has brought forward the release of the regular *Hellraiser Trilogy* BD boxset to January 25 after its *Hellraiser: The Scarlet Box* limited edition sold out on pre-order. The new set boasts the same HD platters for the first three *Hellraiser* films as...*The Scarlet Box*, but drops the *Clive Barker Legacy* bonus disc and 200-page book.

10 Beeb opens online store

November saw the launch of the BBC Store website, a new digital service offering more than 7,000 hours of downloadable TV content. Prices start at around £1.89 for a single episode in SD or £2.49 for the same in HD (some shows can also be purchased as entire series). As well as modern hits, the content spans 60 years of programming and includes a large number of rarities and classic shows from the BBC archives.



PREMIERE

What's happening in the world of TV and films...

Keep on running

The on-again-off-again remake of *Logan's Run* is back on with producer and writer Simon Kinberg reportedly working on turning it into a *Hunger Games*-style franchise for a younger audience.

What's in a name?



20th Century Fox has revealed that Ridley Scott's *Prometheus* sequel will be called *Alien: Covenant* when it hits cinemas in October 2017. The change of name would appear to be the final nail in the coffin of Neill Blomkamp's planned *Aliens* sequel.

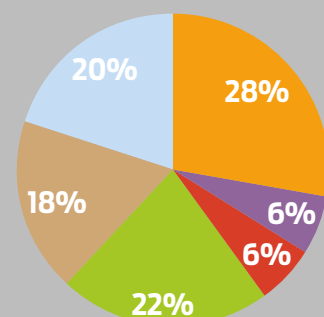
Tetris film on the way

Don't worry, Hollywood isn't going to unleash a blockbuster flick on cinema audiences detailing the action-packed adventures of the red L-shaped Tetrimino block. Instead, Brett Ratner and James Packer are developing a *Social Network*-style film about *Tetris* creator Alexey Pajitnov and the globe-spanning legal battles over the rights to the game.

WE ASKED...

Which part of your setup are you upgrading/replacing this Xmas?

TV Speakers Projector
AV receiver Games console
None of it



Results from www.homecinemachoice.com
Go online for more polling action

Black ops Blu-ray

Spectre → 20th Century Fox
→ Region B BD & R2 DVD



Having broken various records at the UK box office, the latest Bond adventure has its sights set on repeating the trick for Blu-ray and DVD when it hits shelves on February 22. And while *Spectre*'s soundmix and bonus feature details remain top secret, it's a safe bet that any film featuring the largest stunt explosion in cinema history will be packing a licence to thrill...





† Screen image shown is simulated

The Perfect Blend

Humax & Netflix giving you the perfect blend of subscription free HD TV & HD TV on demand.

Available in Cappuccino & Mocca the new Humax FVP-4000T Freeview Play recorders with built in Wi-Fi and 3 x HD tuners allow you to view over 60+ channels of subscription free TV plus connect seamlessly to your wireless home network and enjoy the best in catch-up TV, additional apps and video on demand services.*

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NETFLIX

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* The Freeview play service and channels are subject to change and may be changed from time to time. Minimum broadband speed of 3mbps required for catch up and on demand services. Netflix available in late 2015. Streaming membership required.

A NEW CATEGORY OF TV

Staggering colour and contrast, supreme detail, great sound... say hello to the future of television

Remember the first time you saw Full HD? The difference in quality? The immersiveness? Time for that again. This is the LG 55EF950V. It's the first flat OLED 4K TV ever, and what you've been waiting for.

Each pixel emits its own light, so one can be white while its neighbour is black – meaning staggering, infinite contrast and amazingly accurate yet vivid colour. But this TV also has more pixels – four times as many – as a Full HD TV. It makes for astonishing detail, as well as OLED's superb motion handling and true-to-life colour. Get one of these and you'll want to shout about it; to get people round to watch movies and sport, and play games.

And it's not just the picture. There's also the harman / kardon™ speakers that pack a punch not usually associated with ultra-thin screens. And the stand – which makes the TV appear to float. The set comes with LG's acclaimed webOS smart platform too, and with it, content from the likes of Netflix, NOW TV, BBC iPlayer and Amazon Prime.

This is not just a new TV, this is a whole new category of television.



“...THE REALITY IS THAT
OLED IS THE FUTURE OF TV”



APRIL 2015



ED TV



LG TV Featured EF950V

LG 55EF950V

Incredible colour, contrast and detail on this flat panel combine with premium audio by Harman / Kardon™ and Smart TV with webOS

Display 55in OLED
Resolution ULTRA HD 4K (3840 x 2160 pixels)
Audio 2.0-channel

OUT WITH THE OLD, IN WITH THE OLED

WHAT HI-FI?
★★★★★



Stuff
★★★★★

LG 55EG960V

Fusing OLED technology with 4K resolution, LG OLED 4K TV brings you the finest viewing experience imaginable.

Display 55in OLED

Resolution ULTRA HD 4K (3840 x 2160 pixels)

Audio 2.0-channel



LG 55EG920V

Ultra-slim curved design, jaw-dropping detail, colour and black levels and premium sound by Harman / Kardon™

Display 55in OLED

Resolution ULTRA HD 4K (3840 x 2160 pixels)

Audio 2.0-channel



LG 55EG910V

A Full HD OLED TV with deep blacks, incredible colour and amazing detail – for a price that will amaze you.

Display 55in OLED

Resolution Full HD 1080 (1920 x 1080 pixels)

Audio 2.0-channel



LG 55EC930V

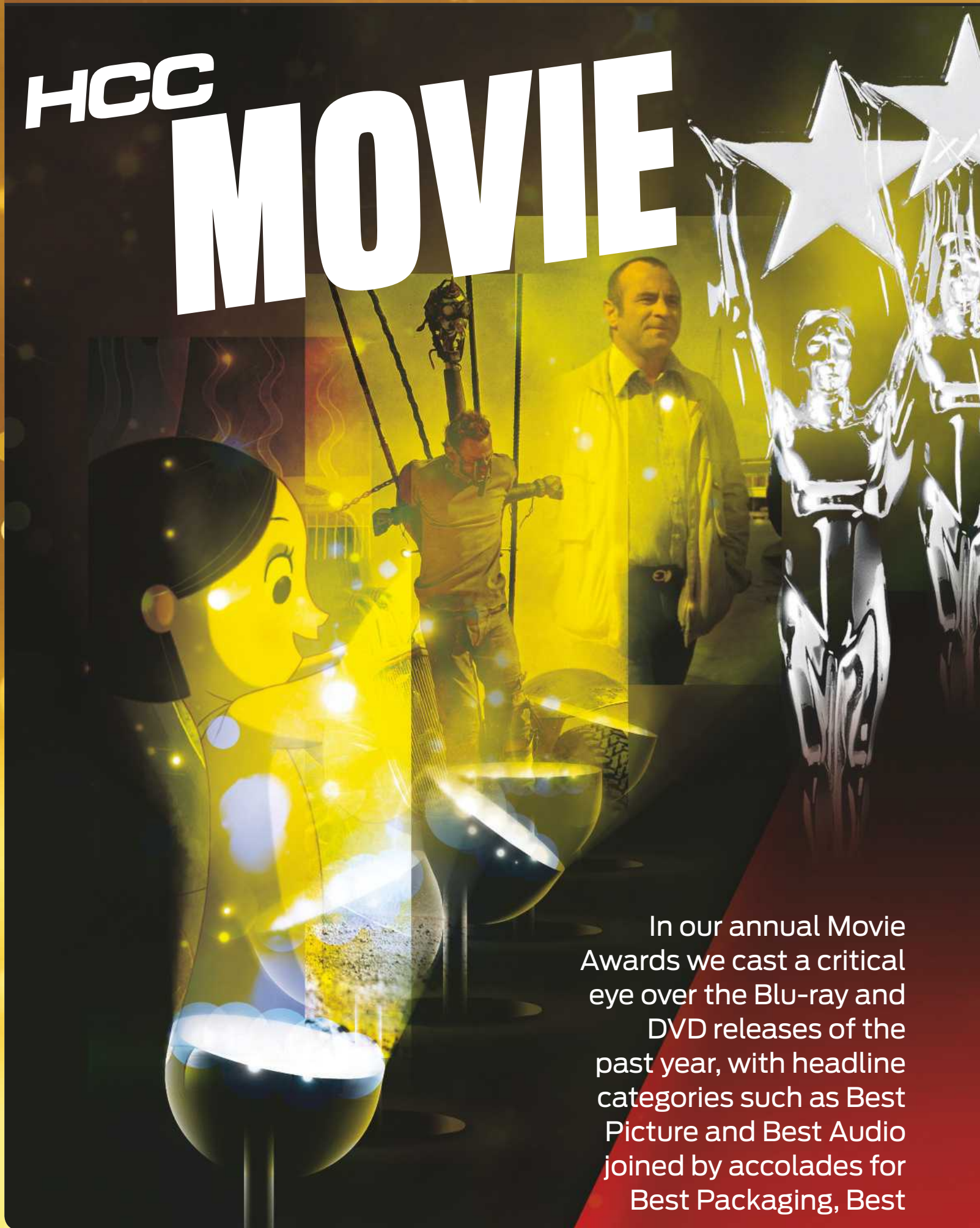
Not ready for 4K? Full HD OLED just as great. Its curve immerses you and webOS puts a world's worth of content at your fingertips.

Display 55in OLED

Resolution Full HD (1920 x 1080 pixels)

Audio 2.0-channel

HCC MOVIE

A collage of movie-related images. On the left, a large, stylized cartoon character with a black headband and a yellow face. In the center, a man in a white lab coat stands next to a man in a white shirt and dark pants. On the right, several Oscar statues are shown. The background is a mix of yellow and black with bokeh light effects.

In our annual Movie Awards we cast a critical eye over the Blu-ray and DVD releases of the past year, with headline categories such as Best Picture and Best Audio joined by accolades for Best Packaging, Best

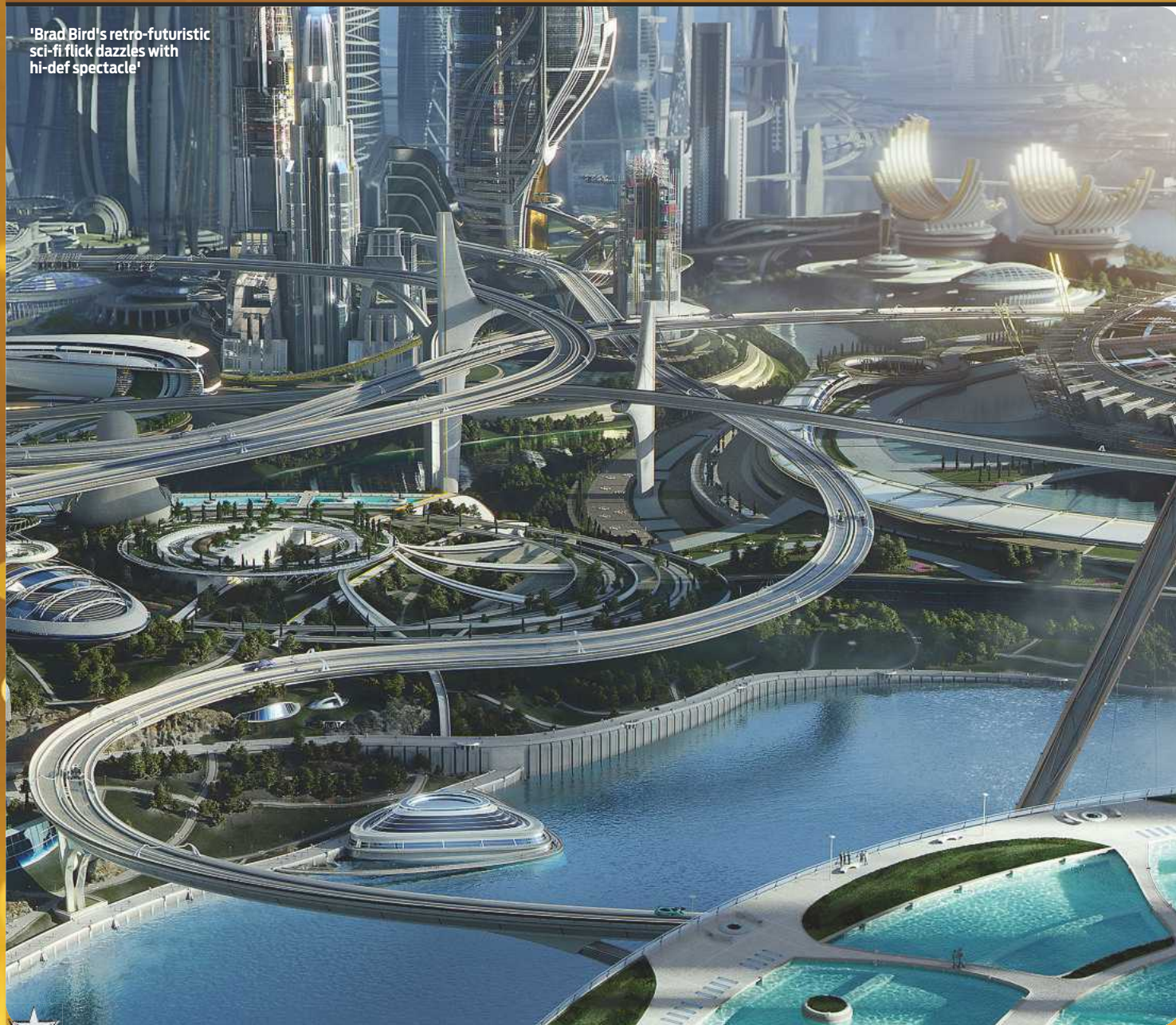
AWARDS

2015

Remaster, Best Extra and many more. If you're keen to experience the greatest that home cinema currently has to offer – and make sure there are no holes in your disc collection – you've come to the right place!

WHO WINS? TURN THE PAGE...

'Brad Bird's retro-futuristic sci-fi flick dazzles with hi-def spectacle'



BEST PICTURE QUALITY

WINNER

TOMORROWLAND: A WORLD BEYOND (WALT DISNEY)

The world's first ever Dolby Vision cinema release also cuts a spectacular figure in Full HD. Bursting with bold colours, pristine blacks and futuristic levels of fine detail, this 2.20:1-framed transfer of Brad Bird's digital photography represents Blu-ray at the top of its game. It's utterly faultless – spin up the disc, sit back and prepare to be blown away.



ALSO NOMINATED

LUCY
THE HOBBIT: THE BATTLE OF THE FIVE ARMIES
INTERSTELLAR
JURASSIC WORLD
MAD MAX: FURY ROAD
PIXELS



BEST SFX

WINNER

JURASSIC WORLD (UNIVERSAL PICTURES)

When it comes to visual effects, the *Jurassic Park* franchise really is the gift that keeps on giving. While Steven Spielberg's 1993 original redefined the world of CGI, this long-awaited follow-up takes its pixel-pushing a step further, not only convincing us that its prehistoric critters are living, breathing animals, but giving them distinct personalities too. A monstrous achievement.

ALSO NOMINATED

INTERSTELLAR
FAST & FURIOUS 7
AVENGERS: AGE OF ULTRON



BEST 3D BLU-RAY

WINNER

THE HOBBIT: THE BATTLE OF THE FIVE ARMIES 3D (WARNER BROS.)

The finale to Peter Jackson's epic adaptation of *The Hobbit* makes for an awe-inspiring stereoscopic experience – perhaps the best that live-action cinema has to offer. There's an authentic sense of depth that dovetails with the CinemaScope cinematography to create pure immersion, backed up by lush textures and lashings of detail.

ALSO NOMINATED

THE BOOK OF LIFE 3D
JUPITER ASCENDING 3D
MAD MAX: FURY ROAD 3D

BEST PACKAGING

Hellraiser: The Scarlet Box (Arrow Video)



'You opened it. We came...'

Having sold out on pre-orders, fans of Clive Barker's fright franchise will have to go to Hell and back in order to get their hands on this limited edition Blu-ray boxset. However, the effort is clearly worth it, with Arrow Video's new restorations of the first three *Hellraiser* films arriving in a beautifully designed box alongside plenty of exclusive collectibles including a poster, five art cards and a luxurious 200-page hardback book.



BEST REMASTER

WINNER

THE LONG GOOD FRIDAY (ARROW VIDEO)

Another year, another well-deserved award for Arrow's restoration supervisor James White and his talented team. Working from the ground up utilising the original camera negative, this freshly-minted 2K restoration of *The Long Good Friday* delivers a major upgrade over the film's previous lacklustre hi-def outings, with significant improvements evident in stability, colour and detail.

ALSO NOMINATED

THE THIRD MAN
LES YEUX SANS VISAGE (EYES WITHOUT A FACE)
THIEVES' HIGHWAY



BEST DVD EXCLUSIVE

WINNER

ELECTRIC BOOGALOO: THE WILD, UNTOLD STORY OF CANNON FILMS (METRODOME)

In the 1980s, Cannon rewrote the Hollywood rulebook with its frenetic output of low-budget action flicks and sci-fis – notching up 43 movies in 1986 alone. The company's meteoric rise and rapid fall (following the disastrous *Superman IV*) is recounted in this brilliant feature-length doc, which splices archive and talking-heads footage with trailers and clips from the likes of *Lifeforce*, *Death Wish II* and *Breakin'*.

ALSO NOMINATED

LIFE ITSELF
MARSHLAND
FUTURE SHOCK! THE MAKING OF 2000AD



BEST WORLD CINEMA

WINNER

THE STRANGE CASE OF DR. JEKYLL AND MISS OSBOURNE (ARROW ACADEMY)

From the sensitive new 2K restoration of the film's haunting visuals to the extensive array of supplementary material that has been assembled, this hi-def outing for Walerian Borowczyk's outrageous 1981 take on the Jekyll and Hyde story is an unqualified success as both a standalone release and a companion to Arrow's earlier award-winning Borowczyk Blu-ray boxset.

ALSO NOMINATED

A GIRL WALKS HOME ALONE AT NIGHT
LES YEUX SANS VISAGE (EYES WITHOUT A FACE)
MARSHLAND

BOOK OF THE YEAR



The Making of Stanley Kubrick's 2001: A Space Odyssey

This lavish Taschen Books' tome was once only available as part of a £900 multi-volume limited Collector's Edition. Now re-released as a standalone £50 option, it's everything a movie book should be. Put together by SFX/tech journo Piers Bizony, across its 562 pages it features a wealth of exclusive imagery (set photos, conceptual art, etc) culled from the Stanley Kubrick archives. As an indispensable partner to the director's sci-fi classic, it even mirrors the shape of the film's iconic monoliths.



BEST TV RELEASE

WINNER

OUTLANDER: COMPLETE SEASON ONE – COLLECTOR'S EDITION (SONY PICTURES)

This historical-fantasy series may have debuted on the Starz network but finds its real home on Sony Pictures' five-disc Blu-ray boxset, with Full HD encodes that revel in the show's stunning Scottish locations and atmospheric, musical DTS-HD Master Audio 5.1 mixes. And in this Collector's Ed., *Outlander's* sixteen episodes of complex, gritty drama are accompanied by superb extras and a 68-page book.

ALSO NOMINATED

THE AVENGERS: THE COMPLETE SERIES 4
THE WIRE: THE COMPLETE SERIES
THE WALKING DEAD: THE COMPLETE FIFTH SEASON

'Thrilling, inventive audio with a monstrous dynamic range...'



BEST AUDIO QUALITY

WINNER

MAD MAX: FURY ROAD (WARNER BROS.)

George Miller's kinetic action flick proves exactly what a Dolby Atmos soundtrack is capable of – this is thrilling, inventive, detailed stuff with a monstrous dynamic range. Audio highlights are varied and copious, running from exquisite use of localised, positional effects to the room-filling score, thunderous LFE hits, sweeping sonic pans and nailed-down dialogue. *Mad Max: Fury Road* storms through your cinema like an aural hurricane. Play it loud and proud!

ALSO NOMINATED

FURY
INTO THE WOODS
EXODUS: GODS AND KINGS
WHIPLASH
CHAPPIE
JUPITER ASCENDING



Song of the Sea eschews CGI in favour of hand-drawn animation



BEST ANIMATION

WINNER

SONG OF THE SEA (STUDIOCANAL)

Song of the Sea feels like a breath of fresh air in an ocean of CG 'toons, with exquisite – and unusual – hand-drawn visuals proving the perfect accompaniment to its Celtic folklore-infused narrative. StudioCanal has knocked up an exemplary Blu-ray for this cracking animation, with engaging DTS-HD MA mixes (English and Gaelic) and input from director Tomm Moore in the extra features.

ALSO NOMINATED

THE BOOK OF LIFE 3D
THE TALE OF THE PRINCESS KAGUYA
INSIDE OUT



SORRY OPTOMA.

8 OUT OF 10¹ PREFER EPSON.



In a like-for-like test of HD projectors,
8 out of 10 people said they'd
choose to own an Epson over Acer,
BenQ, Optoma and ViewSonic.

We know for the ultimate experience you want only
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1. Aug 2015: Epson blind test between Acer H6510BD, BenQ TH681+, Epson EH-TW5200, Optoma HD26 and ViewSonic PJD7822HDL.
For further info on the test and on the 3x brighter colours data please see www.epson.co.uk/CLO

2. Survey conducted by Futuresource Consulting Limited for the period from 2001 to 2015.

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BEST EXTRA

WINNER

EATEN ALIVE! THE RISE AND FALL OF THE ITALIAN CANNIBAL FILM (*ZOMBI HOLOCAUST*, 88 FILMS)

It's always a joy when BD/DVD extras are used to explore the more maligned aspects of cinema. Here, Calum Waddell's fascinating feature-length documentary charts in rare detail the short-lived fad for Italian cannibal movies that covered screens in gore in the 1970s and '80s. A brilliant addition to 88 Films' *Zombi Holocaust* platter.

ALSO NOMINATED

THE SCIENCE OF INTERSTELLAR [*INTERSTELLAR*]

KEEPERS OF THE COVENANT: THE MAKING OF EXODUS... [*EXODUS: GODS AND KINGS*]

TALKING FAST [*FAST & FURIOUS 7*]



BEST DEMO

WINNER

MAD MAX: FURY ROAD (WARNER BROS.)

Picking just one demo scene from this blockbuster is an almost impossible task – the mix of non-stop action, rich 1080p imagery and dazzling Atmos audio make the whole shebang an AV showcase. The dust storm (Chapter 3) is our favourite sequence, though, with its largescale painterly visuals and creative use of the 3D soundfield combining to make the best ten minutes in AV that 2015 had to offer.

ALSO NOMINATED

TEENAGE MUTANT NINJA TURTLES 3D [*DOWNHILL CHASE*]

THE HOBBIT: THE BATTLE OF THE FIVE ARMIES 3D [*DRAGON SLAYER*]

JURASSIC WORLD [*INDOMINUS REX BREAKS LOOSE*]



DISC FAIL

WINNER

AVENGERS: AGE OF ULTRON'S ANAEMIC AUDIO (WALT DISNEY)

From its Hulk vs. Hulkbuster brawl to the showdown with Ultron's robot army, Marvel's sequel had everything you need for a stunning mix, yet the lack of power and range in the DTS-HD MA 7.1 track makes its sound like they're punching each other with cotton wool.

ALSO NOMINATED

PADDINGTON'S PITIFUL EXTRAS

PREDESTINATION'S INCORRECT ASPECT RATIO

UPSCALED GAME OF DEATH



BEST FILM BOXSET

WINNER

THE LONG GOOD FRIDAY + MONA LISA (ARROW VIDEO)

In a year that saw Arrow release plenty of superb boxsets (including two of the nominations below) this timely reminder of Bob Hoskins' talent towers above them all. As well as two gorgeous new 2K restorations, it comes loaded with exclusive extras including an HD presentation of John Mackenzie's public information film *Apaches*.

ALSO NOMINATED

VIDEODROME: LIMITED EDITION

HELLRAISER: THE SCARLET BOX

THE CHARLIE CHAPLIN COLLECTION



BEST FIGHT

WINNER

ANT-MAN VS. YELLOWJACKET (ANT-MAN, WALT DISNEY)

While many CG-enhanced superhero slobberknockers are accused of looking like action figures come to life, *Ant-Man's* imaginative and exciting showdown makes it literal. Following a punch-up in a briefcase, Ant-Man and Yellowjacket take their brawl to a child's bedroom with their life and death battle playing out on a toy train set. Superb.

ALSO NOMINATED

ZHANG ZIYI VS. MAX ZHANG [THE GRANDMASTER]
 DWAYNE JOHNSON VS. JASON STATHAM [FAST & FURIOUS 7]
 I. REX VS. RAPTORS AND T-REX [JURASSIC WORLD]



BEST COMEDY

WINNER

WHAT WE DO IN THE SHADOWS (METRODOME)

The writers who gave us *Flight of the Conchords* inject some much-needed fresh blood into the lifeless corpse of the horror comedy with this New Zealand mockumentary following four vampire flatmates. Tapping into a rich vein of deadpan humour and observational silliness, *What We Do In The Shadows* is one of the funniest genre satires you'll ever see.

ALSO NOMINATED

PADDINGTON
 TED 2
 SPY



BEST GAME

WINNER

METAL GEAR SOLID V: THE PHANTOM PAIN (KONAMI)

If this really does prove to be game designer Hideo Kojima's final *Metal Gear Solid*, then he definitely saved the best for last. Raising the bar for blockbuster games...*The Phantom Pain* is an astonishing and ambitious open-world reinvention of the series' trademark stealth gameplay married to some serious audio-visual panache. Dim the lights, fire up your bigscreen and start sneaking...

ALSO NOMINATED

BLOODBORNE
 THE WITCHER 3: WILD HUNT
 BATMAN: ARKHAM KNIGHT



ICON OF THE YEAR

WINNER

GEORGE MILLER

Think action cinema is a young man's game? Then think again. Having spent a couple of decades playing with talking animals (*Babe*, *Happy Feet*, etc.), 70-year-old filmmaker George Miller reclaimed the action-movie crown he hung up in 1985 with this Summer's sensational *Mad Max: Fury Road*. Welcome back, George, you've been missed. Now make the sequel.

ALSO NOMINATED

TOMM MOORE – IRELAND'S ANSWER TO HAYAO MIYAZAKI
 CHRISTOPHER NOLAN – MASTER OF IMAX
 T-REX – STILL UNDEFEATED...

28 MOVIE AWARDS

Warner Bros. continues to cater for all types of Blu-ray aficionados



It's not all about films: Warner has released superb TV boxsets too



Blu-ray blockbusters like *Interstellar* are what home cinema was made for...



LABEL OF THE YEAR

WINNER

WARNER BROS. HOME ENTERTAINMENT

At a time when some major Hollywood labels seem to be turning their attention away from physical media, Warner Bros. remains as committed as ever to silver discs. From the latest event pictures to small-screen sitcoms, the studio's support for Blu-ray is unwavering and its constant striving for audio-visual excellence (including a rapid uptake of the Dolby Atmos format) has seen it deliver many of the year's most impressive hi-def platters.

ALSO NOMINATED

ARROW VIDEO/ACADEMY
EUREKA: THE MASTERS
OF CINEMA SERIES
UNIVERSAL PICTURES



'A Blu-ray release no home cinema fan can afford to be without'



DISC OF THE YEAR

WINNER

MAD MAX: FURY ROAD

It's already snapped up our Best Demo and Best Audio awards, so finding *Mad Max: Fury Road* crowned Disc of the Year shouldn't come as much of a surprise. As a movie, it's nigh-on perfect, with its stripped-back narrative and accomplished editing allowing the automotive mayhem to take centre-stage. And as an AV extravaganza it pushes the envelope with its bombastic sound design and sand-strewn Full HD visuals. All of which makes it a Blu-ray release no home cinema fan can afford to be without.

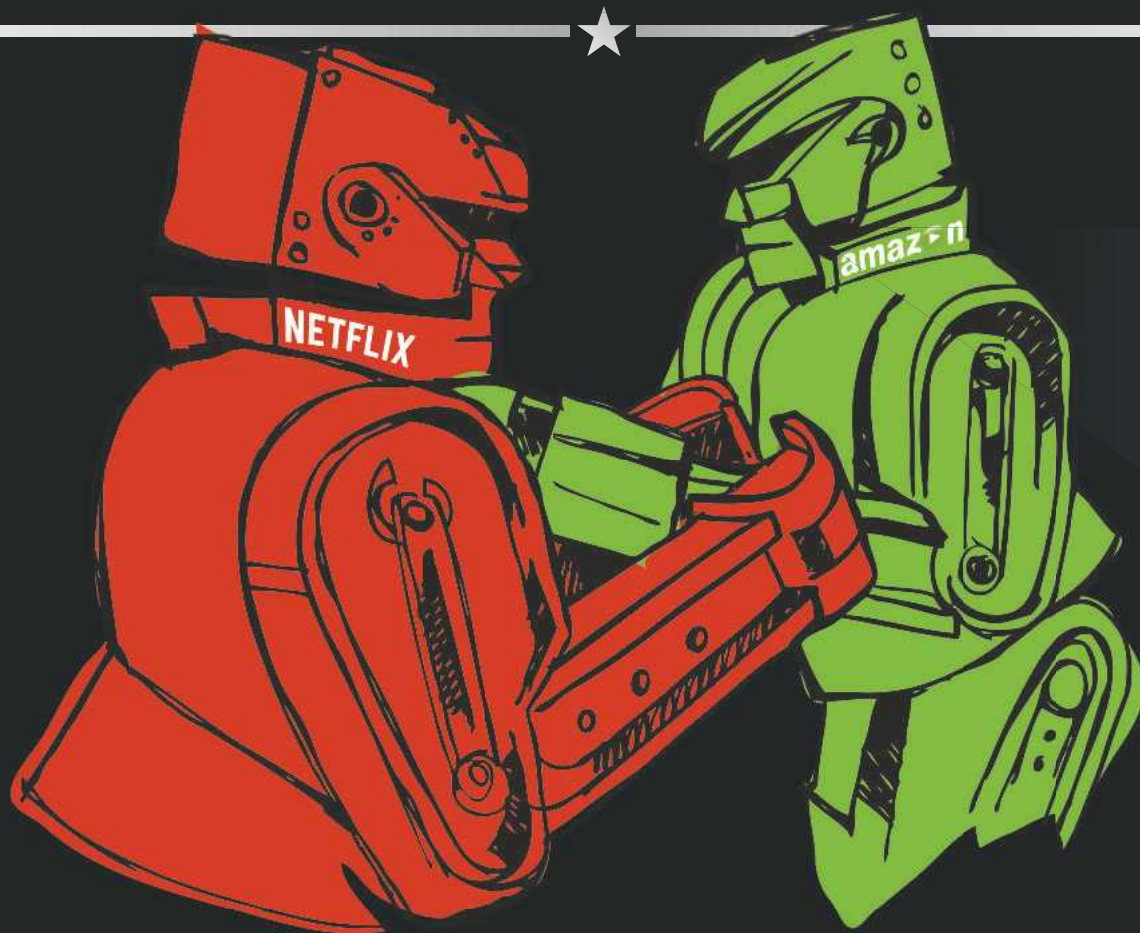


ALSO NOMINATED

THE LONG GOOD FRIDAY +
MONA LISA
INTERSTELLAR
THE THIRD MAN

BATTLE OF THE VODs

NETFLIX vs AMAZON



Netflix and Amazon have made binge-watching a national obsession, but which streaming service is best? **Steve May** gets square-eyed...

TV HAS EVOLVED. Fuelled by the rollout of broadband internet, Netflix and Amazon have transformed the concept of on-demand viewing and created a culture where it's easy to be a TV addict. Binge-watching has become a cause célèbre; booking a day off to devour the latest hot season when it lands has become a social more.

These so-called OTT (Over The Top) streaming services have also set the pace when it comes to next-gen broadcast technology. While we wait for UHD Blu-ray and Sky Q, they've become the place to go for native 4K content – available at a cost that doesn't break the bank. And with HDR on the cards, and maybe even object-based audio too, their appeal to serious cinephiles is certain to increase.

Netflix is the bigger of the two services. It boasts 65 million subscribers across sixty countries. While it offers an entry-level subscription of £5.99 per month, this is for standard-definition streams only and should be avoided. The HD package starts at £7.49 a month, and allows viewing on two devices at the same time. The Ultra HD subscription is £8.99 a month and supports four simultaneous viewers.

Amazon Prime is rather more competitive. With around 40 million subscribers worldwide, it offers a suite of services for a yearly fee of £79. In addition to Amazon Video in both HD and 4K (with no price premium for the latter), you get free postal delivery of your Amazon.co.uk purchases, music streaming and cloud storage. It's a solid deal by any measure.

But how do the two services compare when it comes to video content and hardware support?

Round One: The Shows

Both Netflix and Amazon Video (the VOD aspect of Amazon Prime) boast a huge variety of TV. Choosing between them is a thankless task. Netflix tempts with seasons of *American Horror Story*, *Spartacus*, *Fargo*, *Sherlock* and *Continuum*, while Amazon Video counters with *The Walking Dead*, *Arrow*, *Grey's Anatomy*, *The [American] Office* and *The 100*. Both offer a rich and varied feast, although it's important to remember that licensing deals are time-limited, and that your favourites will at some point quietly disappear without fanfare.

Netflix is probably the best option for back-catalogue TV, offering a variety of shows that you might have missed first time around – the complexity and ambition of J.J. Abrams' five-season reality-warping yarn *Fringe* makes for a great

'While we wait for Ultra HD Blu-ray, Netflix and Amazon have become the place to go for native 4K content'

all-you-can-eat experience, while ten seasons of the anarchic *It's Always Sunny in Philadelphia* delivers copious guffaws. However, increasingly it's original productions that are generating buzz and subscription fees. The Netflix Marvel Studios miniseries deal, which has seen *Daredevil* and *Jessica Jones* carve out a gritty new niche, is a massive vote winner. Similarly, other exclusives such as *Marco Polo*, *Narcos*, *Master of None*, *Sense8* and *Better Call Saul* scratch multiple genre itches.

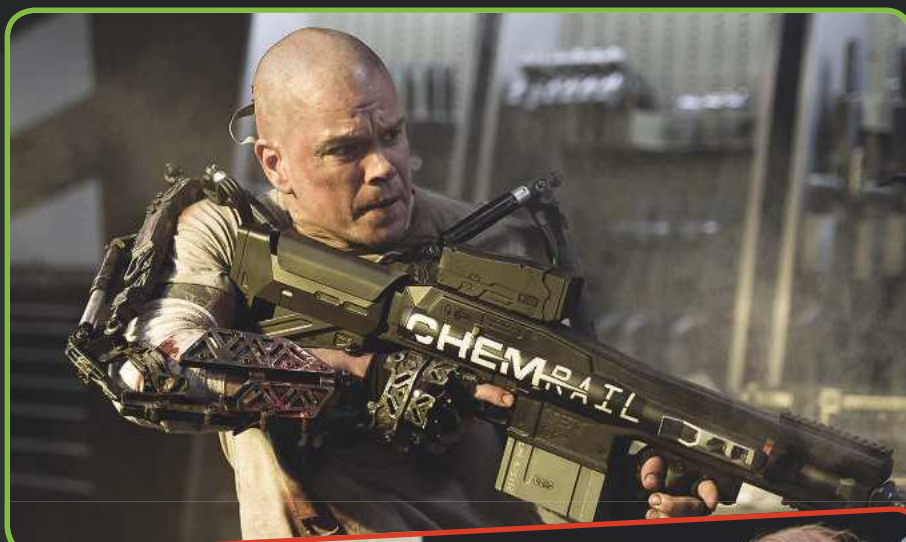
But Amazon is matching it blow for blow with new commissions and canny acquisitions. Amazon Video is the home of our TV show of the year, *Outlander*, a gloriously rich and brutal time-travelling historical romance, as well as tough police thriller *Bosch*, high-concept alternate history *The Man in the High Castle*, dystopian martial arts adventure *Into the Badlands* and cyber-fi *Mr Robot*.

Amazon also runs its annual pilot season, which sees teaser shows trialled before being given season status – look out for newly-released Tarantino-style westerner *Edge the Loner*.

Both services have committed to producing and distributing their new content in 4K with 5.1 Dolby Digital surround as standard.

Round Two: The Movies

When it comes to features, our streaming behemoths offer more of a mixed bag. Of the Top Ten box office titles of 2014 (according to the IMDB), Netflix currently offers only three – *Captain America: The Winter Soldier*, *The Hobbit: Battle of the Five Armies* and *Hunger Games: Mockingjay Part 1*, while Amazon Video has none, although all are available outside of Prime on pay-per-view.



And there's plenty of inconsistency. While *Hunger Games: Catching Fire* and *...Mockingjay Part 1* are available from Netflix, the original isn't. There are *Hobbit* flicks, but no *LOTR*. Both *Alien* and *Predator* franchises are AWOL.

Indeed, Netflix has begun to pull back from the movie market. The company severed ties with its biggest Stateside film supplier, Epix (owned by MGM, Lionsgate and Paramount), earlier in the year, as part of a strategy decision to focus on original and exclusive content. The first high-profile result of the in-house shift is the African child soldier drama *Beasts of No Nation* starring Idris Elba. The movie has generated Oscar buzz despite barely having time to sniff the popcorn on the theatrical circuit. Less likely to win awards, but certain to stream like billy-o, is *Ridiculous Six*, the first in a four-picture deal with Adam Sandler. Netflix has also signed up Brad Pitt, Ricky Gervais and Judd Apatow for feature-length projects.

There are home cinema favourites to be had, though: *Mission Impossible: Ghost Protocol*, *Kick-Ass 2*, *Insidious*, *Horns*, *Sin City 2*, *Thor: The Dark World*, *Star Trek Into Darkness* and *World War Z* are all on tap. And there's some lovely esoteric stuff if you go searching. If your jam is kung-fu fisticuffs and Eastern action, you'll find (knuckle)-cracking classics like *The Five Venoms*, *Ip Man*, *Drunken Master* and *Hard Boiled* awaiting.

But interestingly there's no Hollywood 4K film content on Netflix, and this is where Amazon really comes into its own. Amazon's selection of UHD movies is growing apace, including *About Last Night*,>

Sci-fi flick *Elysium* (top) streams in 4K via Amazon Video; Netflix offers Marvel movies, but in HD only



Daredevil and *Jessica Jones* (top, second from top) are major draws to the Netflix service; *Arrow* and *The Man in the High Castle* (bottom) are Amazon heavy-hitters

No Good Deed, Deliver Us From Evil, Jerry Maguire, The Amazing Spider-Man, Bad Teacher, Elysium, Amazing Spider-Man 3, Ghostbusters 2, Fury, Salt, Total Recall (the remake) – and from further back in the archives *It Happened One Night* and *The Guns of Navarone*, amongst others. If you want an instant UHD film collection, Amazon offers it.

Round Three: The Hardware

For many, it'll be the availability of a given platform that seals the deal. Netflix has managed to make itself ubiquitous. It's on almost every connected smart TV platform, even to the point of having its own dedicated button on the remote, as well as games consoles and Blu-ray players. It's also the most likely 4K service to find on HEVC-enabled connected UHD TVs.

Amazon has fewer compatible devices, particularly when it comes to 4K. Panasonic and Samsung offer it, but it's far from a given. You'll find its regular HD app on connected screens from the likes of LG, Panasonic, Samsung and Sony, as well as Blu-ray players from Samsung and Sony. Both next-gen games consoles, and the Nintendo Wii U, offer Amazon Video too.

For many, the best solution is to get a dedicated media streamer. The Roku platform is available as a media puck (the Roku 2 retails for £70, the 3 for £100), or £50 HDMI stick. However, neither are 4K enabled (the UHD-ready Roku 4 has no confirmed UK launch as yet). The NVIDIA Shield Android-powered media player supports Netflix 4K, but has no Amazon client.

Dedicated Amazon hardware is arguably the better bet. The latest version of the £80 Fire TV box is 4K enabled and offers both Amazon and Netflix 4K clients. To unlock the 4K stream you'll need an appropriately fast broadband connection, plus an HDMI HDCP 2.2 enabled port on your 2160p screen.

Unfortunately, at the time of writing Netflix has removed the multichannel sound option from its 4K app on the Amazon box – which means that while you can enjoy a 2160p image (or 1080p on a non-UHD screen), you're limited to stereo sound, which is a bit of a nonsense. Hopefully 5.1 will be reinstated at some point, but until then cinephiles should be wary.

Amazon also has an HDMI stick streamer (£35). This is not 4K enabled but does offer 5.1 audio.

Amazon isn't only a software business...



Image quality from Amazon Video and Netflix can be extremely good, provided your line is fast enough. To receive a 4K service you'll need a broadband speed of 15Mbps or higher and ideally a hard-wired connection to the router. HD is more forgiving.

Such is the nature of adaptive streaming and unpredictable network connections that it's very difficult to make direct comparisons between the two. Netflix looks a little scruffier at first as it assesses bandwidth during the first minute of the stream; Amazon tends to assess before the show starts. While neither compare to BD (and as yet can't match discs when it comes to audio fidelity) they are certainly comparable to other broadcast services.

The verdict

It's not difficult to see why broadband-delivered streaming media services are a game-changer. But which of these two services should you opt for? Indeed, should you even have to decide between them? As both follow an original and exclusive programme strategy, monogamy seems an almost unsustainable concept. How can you choose between *Jessica Jones* and *The Man in the High Castle*? Or *House of Cards* and *Outlander*?

Well, if you're principally interested in 4K, then the decision is clear-cut. Amazon is storming ahead with a fast-growing TV and movie portfolio in UHD. *Elysium* in 4K on Amazon looks absolutely spectacular, and it's difficult to resist the allure of cinema classics getting their UHD debut on the platform. Amazon also wins on value, earning brownie points because it bundles next day (or thereabouts) delivery from its shopping service, plus cloud storage as well as access to Spotify wannabe Prime Music.

If your smart TV allows it or you opt for a Fire TV box, you can subscribe to both. It should be noted that while Amazon Prime is best paid for upfront, it's actually quite possible to dip in and out of Netflix, the benefit of a cancel anytime payment plan.

So while Amazon edges it as our best OTT proposition, based on current content, value and the fact it hasn't junked multichannel sound on some hardware platforms, both services are too good to ignore. Either as your sole premium content source, or a complement to Blu-ray or pay TV package.

Now if you'll excuse us, we've got some binge-watching to be getting on with ■

FINAL SCORE

How the two streamers stack-up

amazon	✗	Best user interface	✓	NETFLIX
amazon	✓	Best search	✗	
amazon	✗	Best for back-catalogue TV	✓	NETFLIX
amazon	✓	Best for premium new TV	✓	NETFLIX
amazon	✗	Best for back-catalogue movies	✓	NETFLIX
amazon	✓	Best for Ultra HD	✗	
amazon	✓	Best value	✗	

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Going behind the curtain

**ENTER
ANT-MAN**
Marvel's newest
movie hero
arrives on
Blu-ray, p114

This movie snug is just one part of a smart entertainment space that has **Mark Craven** itching to play ball

CINEMA ROOM CHECKLIST

BOWERS & WILKINS: 2 x ASW610XP

subwoofers; 5 x CWM7.4 speakers

RUNCO: LS-HB Full HD DLP projector

SEYMOUR SCREEN EXCELLENCE: RF 150

WS projector screen (16:9 ratio)

LUMAGEN: Radiance mini-3D video processor

ROTEL: RMB-1575 five-channel amplifier

SAVANT: HRX-SLN501 HDbaseT receiver;

AOM-SS8U 7.1 surround sound module;

iPad app/remote control

APPLE: Apple TV

SKY: Sky+HD

LUTRON: Lighting control

WHILE SOME CRAVE a dedicated cinema room far removed from the hustle and bustle of the rest of the house, others want to integrate largescreen AV thrills with their more regular living space. This issue's professional install is a case of the latter, although it's true that 'regular living space' is stretching it a bit...

The room, which uses a hidden Bowers & Wilkins 5.2 speaker system, Runco projector and Seymour Screen Excellence projector screen, essentially occupies the corner of a massive entertainment space (see over the page), separated only by a heavyweight floor-to-ceiling curtain. It's an unusual scenario, but as installer Cyberhomes explains, the brief demanded it. '[It's] a family space with emphasis on being a play area for the young children and their friends as well as a general entertaining space. The parents like to relax on the large sofa watching TV whilst at the same time being able to keep an eye on their kids in the playroom.'

'Let's go large'

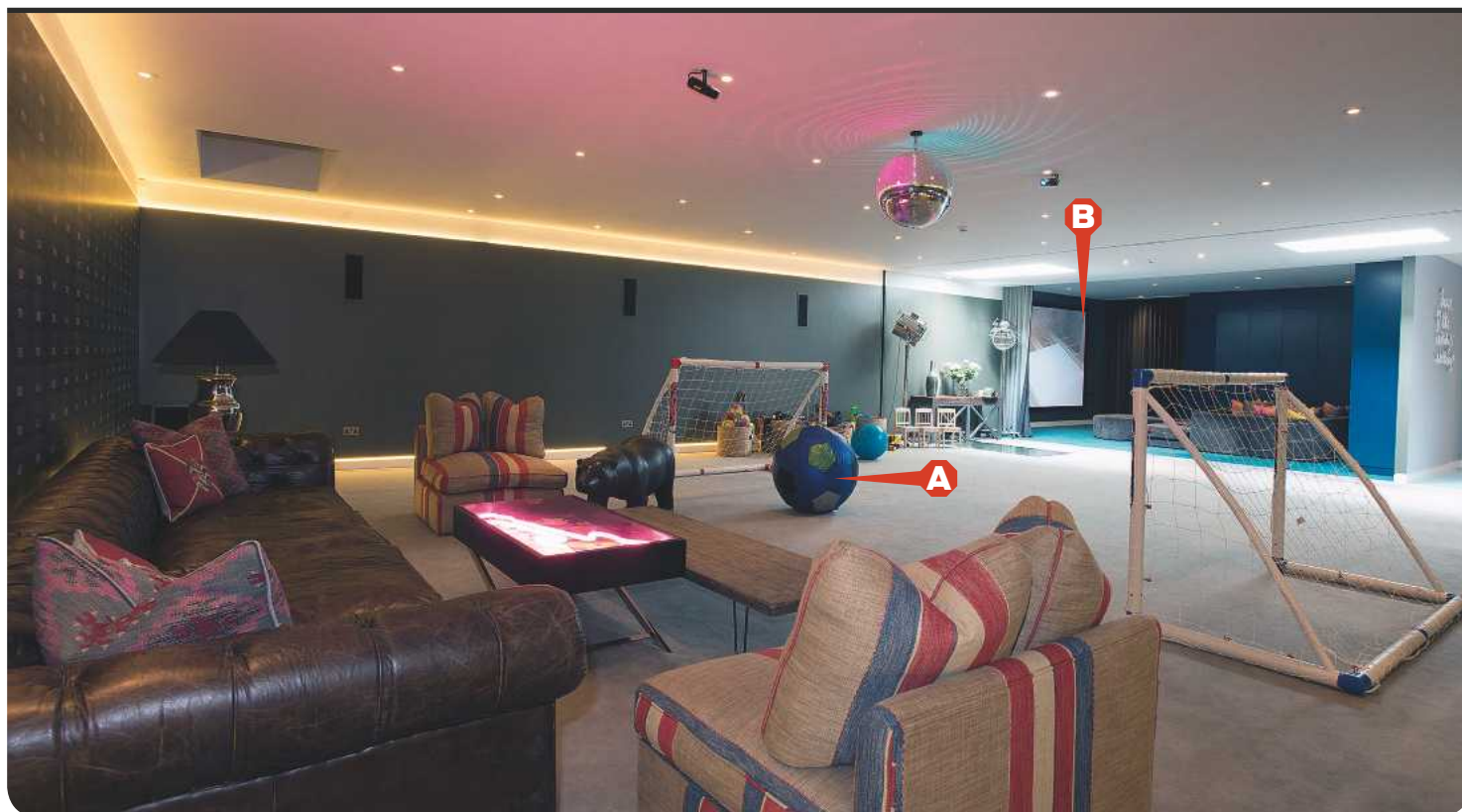
For dedicated movie and sports nights the owners can draw the curtain to isolate the cinema room from the playroom. In here the request was for the biggest screen possible (150in) within the space, so in-wall speakers and acoustically transparent screen material were natural solutions. The Runco PJ suited the distance and brightness requirements.

For much of the time, the AV setup is used to watch TV, so an outboard Lumagen processor was specified to deliver scaling and deinterlacing, with the Lumagen's different profiles letting Cyberhomes establish specific colour management for individual sources including Sky and Apple TV.

The cinema was fitted out at the same time that Cyberhomes was completing a massive automation/multiroom project across the rest of the house – including no fewer than 32 B&W in-ceiling speakers, seven Samsung flatscreens in various zones and luxury tricks such as motion-sensitive lighting. We'd probably still end up in here, though. ➤

Savant control covers heating, lighting, AV and security across the whole house





INSTALL INFO

A GAME ON!

This entertainment space is large enough to fit a mini football pitch

B OPEN SESAME

With the curtains back, the cinema becomes an extension of the main room

C RACKED AND READY

The kit rack, housed in its own 'plant room', indicates the complexity of the whole-house system. Multiple 12-channel Rotel power

amps are in charge of driving the multiroom audio system

D LIGHT FANTASTIC

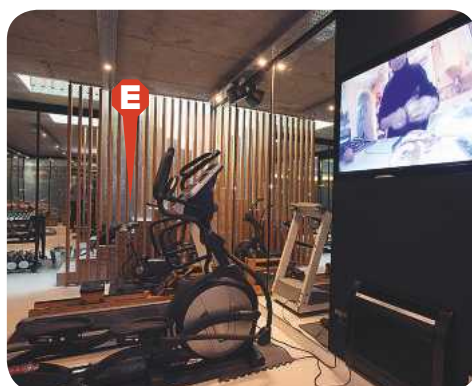
A high brightness Runco projector offers 2,700 lumens and ISF calibration

E KEEPING FIT

Even the gym is kitted out with AV treats

F RAISING THE BAR

A B&W Panorama soundbar teams up with a wall-mounted Samsung flatscreen to create another AV zone





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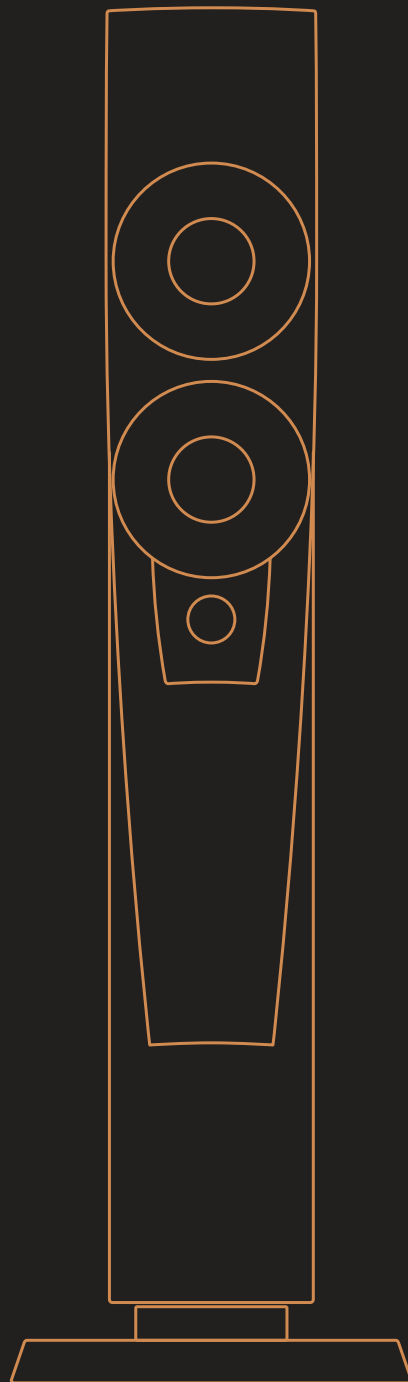
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REVIEWS

→ **THE BEST OF 2015** AV RECEIVERS, AMPS & PROCESSORS Onkyo, Yamaha, Pioneer, Cambridge Audio, Denon, Marantz, NAD **LOUDSPEAKERS** SVS, Q Acoustics, Wharfedale, Monitor Audio, PMC **PROJECTORS**, Epson, Sony, Optoma **TVs** Sony, Samsung, Panasonic, LG, Philips **SOUNDBARS** Canton, DALI, Sony, Yamaha **PLUS** BD players, media streamers, subwoofers, PVRs, accessories and more!

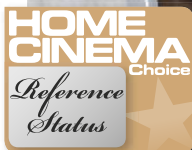
Let's play!



Pioneer's BDP-LX88 lavishes love on your Blu-ray, DVD and music collection. See p68

HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆



Shining a light on UHD

Samsung has reinvented the TV landscape with this premium LED screen, reckons John Archer. Now if only the content world would catch up

AV INFO

PRODUCT:
4K TV with super-bright panel and HDR capability

POSITIONING:
Samsung's flagship 65in TV for 2015

PEERS:
Sony KD-75X9405C;
Panasonic TX-65CZ952

FOR SAMSUNG, 4K is yesterday's news. Old hat. Water under an ultra high-definition bridge. The brand is already on to the Next Big Thing. What's more, this Next Big Thing isn't just something creeping into 'concept corners' at technology shows. It's already unleashed in Samsung's UE65JS9500. This new technology is, of course, High Dynamic Range – or HDR.

As the prosaic name suggests, HDR TVs are all about delivering richer, more vibrant, more contrast-rich and brighter images. Or, more straightforwardly, they're about giving you more of everything you like. As with so much of the best AV stuff, a true HDR experience has a content side and a display side. Content makers have to shoot and, especially, master to HDR specs, and screens have to have the display characteristics and processing power to churn out all that extra HDR goodness.

The real nitty-gritty of the UE65JS9500 – and the main explanation for its high price tag – lies in the picture technologies crammed into

it to deliver on its new HDR promise. The most obvious spec hit is the native UHD resolution. Anything less would be unthinkable for a high-end TV in 2015. More unusual is the bright panel design, which is reckoned to be capable of delivering an HDR-friendly peak luminance of 1,000 Nits – well beyond the level of a typical LCD TV.

Then there's the nanocrystal technology that Samsung has introduced to deliver the sort of expanded colour range required for a true HDR experience. Based on Quantum Dot wavelength manipulation systems, Samsung claims it's capable of delivering a much wider colour space than normal LCD TVs. As much as 93% of the Digital Cinema Initiative (DCI) colourscape, in fact.

It's a gorgeous-looking screen, too – suitably resplendent for such a significant TV. The bezel stands out from the crowd with the glinting lustre of its chamfered metal finish and the way it angles sharply back from its

outer edges towards the panel. The unusual design seems to funnel you into the picture, an effect enhanced by the fact that the UE65JS9500 features a distinct curved design.

As has been the way with flagship Samsung TVs of late, the UE65JS9500's connections are all housed on an external One Connect box. So in theory you can update the set with future processing chipsets and even connection types as and when such updates become necessary. Connections on the current box include four HDMI inputs, four USBs and built-in Wi-Fi and LAN network options.

The latter deliver DLNA streaming and access to the online parts of Samsung's smart TV system. This has undergone a revamp with

'Samsung's curvy 65-incher feels like a game-changer – it's nothing less than a new TV reference'

the introduction of a TV version of Samsung's Tizen OS. The results of this 'Tizenation' of the smart environment are strikingly reminiscent of LG's webOS icon-driven interface, and it means you get a more streamlined, slick, unobtrusive and helpful menu system than was delivered by Samsung's 2014 sets.

Epic performance

Despite all the fine specification talk, nothing prepares you for the jaw-dropping spectacle of the UE65JS9500's native HDR pictures. Delivered for this audition from a Samsung-supplied USB stick and comprising specially remastered clips from *Exodus: Gods and Kings* and *The Life Of Pi*, the HDR picture quality step-up is so vast that going back to normal video feels like stepping back to an earlier, infinitely duller period in AV history.

It's the most extreme aspects of the HDR experience that strike you first. Fearsomely bright and pure whites at one end of the spectrum sit right next to deep, deep blacks. The contrast range is instantly dazzling. Frankly, I'd never expected to experience such an effect from LCD technology. This is especially the case with the highly stylised, stretched-contrast images of *Exodus: Gods and Kings*. Scenes like the parting of the waves and the shots of burning houses at night across the Nile appear so dynamic and punchy in HDR that it's hard to take it all in. Perhaps the most useful comparison I can make is that images have the sort of luminous qualities previously only seen at a good digital cinema.

Colours enjoy extremes of tone that I haven't witnessed before. *The Life Of Pi*'s zoo scenes and the famous sequence where the whale launches itself from the glowing

night-time sea all enjoy an astonishing level of saturation. What's more, nothing about this vastly expanded saturation feels unnatural; it just looks more cinematic.

So I can understand why the AV industry has shifted its gaze from merely adding more pixels to next-generation pictures to making those pixels work better. It's easy to see why content creators are jumping behind HDR in a way that, perhaps, they haven't done with UHD, given the enormous impact it can deliver with relatively little creation effort and much smaller data size/streaming bandwidth requirements. Though having said that, HDR and UHD already feel to me like the proverbial horse and carriage. They just belong together.

To bring the impact of the Samsung screen's HDR capabilities into sharper focus, I ran the HDR *Life Of Pi* clips against the 4K Samsung Video Pack transfer of the same film on a good-quality UHD TV. And this head-to-head underlined just what an impact HDR has, as the standard version looked dim and washed out by comparison. And I've previously considered the Samsung UHD Video Pack transfer to be pretty impressive.

The screen tech Samsung has developed to pursue its HDR dreams also benefits regular content. Colour and contrast appear clearly subdued with non-HDR material, but the nanocrystal colour system, local dimming and extra brightness offered by the panel combine to offer a dynamic performance. An extensive picture calibration suite includes colour and white balance management and a fairly good level of control over the TV's processing options. There's also a mode that emulates the old Rec.709 colour system. Died-in-the-wool standards freaks can select this if they don't want their BD collection to be given a pseudo HDR makeover. Personally, though, I'd argue that Rec.709's time is well and truly up.

Samsung's range-topper also plays its part in 3D's current quality renaissance. As usual with the brand, it's an active design, which means upscaled-to-4K BDs lose none of their resolution impact. And the boost in panel brightness and colour response ensures 3D images have intensity to go with their depth and sharpness. I spotted only rare and subtle traces of crosstalk noise despite the image's brightness, leaving some motion judder (and a few processing artefacts if you try to defeat the judder) as the only significant 3D flaw.

Motion handling with 2D material isn't best-in-class either, and another niggle concerns the preset picture modes; Dynamic, Natural and Movie all hinder the TV's potential. I found Standard to be the best default option for those afraid to tinker.

I'm nit-picking, though: to lovers of TV picture quality this curved 65-incher feels so game-changingly brilliant and ahead of its time that it's impossible to see it as anything less than a new reference product ■

ON THE MENU



→ The UE65JS9500 uses Samsung's new Tizen-powered interface, which proves much slicker and more intuitive than last season's multi-panel approach. Dig into the settings and there's a good range of calibration options, too

SPECIFICATIONS

3D: Yes. Active
4K: Yes. 3,840 x 2,160
TUNER: Yes. Freeview HD, Freesat HD
CONNECTIONS: HDMI x 4; USB x 4; RF input; LNB input; composite video input; Ethernet; integrated Wi-Fi
SOUND: 60W
BRIGHTNESS: 1,000 Nits peak
CONTRAST RATIO: 'Mega'
DIMENSIONS (OFF STAND): 1,451(w) x 849(h) x 125(d)mm
WEIGHT (OFF STAND): 32kg
FEATURES: HDR capability; 1,600Hz motion processing; colour and white balance management; Tizen-powered smart engine; Precision Black local dimming and direct LED lighting; super-bright Ultra Clear Pro panel design; nanocrystal colour technology; USB and DLNA multimedia playback; Standard, Dynamic, Natural and Movie picture presets; screen mirroring; voice and motion control

HCC VERDICT



Samsung UE65JS9500

→ £5,000 approx → www.samsung.co.uk

→ Tel: 0330 726 7864

HIGHS: Dazzling HDR pictures; non-HDR content also impresses; improved smart engine; external connections box; premium build

LOWs: It's expensive; curved design is divisive; motion-handling not best in class

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

The bold and the beautiful

With its 75in panel, this TV puts the 'big' into bigscreen entertainment, says **John Archer**



IF THE CURRENT trend is to try and minimise the space the new generation of TVs take up by giving them slim frames, Sony's KD-75X9405C is the untrendiest TV of the year. It's not just content with assaulting your living room space with a vast 75in screen; this monolithic beast adds sidebars down each side of that screen, making it look more like an 85in set. There's method to Sony's aesthetic madness, though. Built into these left/right bars are six of the most powerful speakers the TV world has ever seen. Or rather heard.

The screen proudly wears a Hi-Res Audio badge, showing it's capable of playing back your 96kHz/24-bit music collection in formats including FLAC and WAV. Onboard DSEE HX upsampling caters for other sources.

The KD-75X9405C takes its picture duties just as seriously. The direct-lit LCD panel is supported by local dimming, and behind the

scenes sits Sony's new flagship X1 video processor. It also boasts an improved Triluminos wide colour gamut panel.

The brand has been busy on the smart TV front, too. Joining last year's homegrown 'Discover' menus are both YouView and – complete with

'scroll back' electronic programme guide access to on-demand content – and the new Android TV platform.

Sony's 75in beast provides 3D using the active system, and is HDR ready (via a firmware update).

Larger than life

While I'd argue that you don't need a massive TV to love 4K, there's also no doubt that it helps. And seeing it writ large on the KD-75X9405C is an experience no movie fan could fail to fall in love with. As well as having the screen acreage to make you feel the impact of those extra millions of pixels, Sony's processing engine and panel design are good enough to underline the detail with some expressive and subtle colour reproduction and exquisite handling of shadow detail and greyscale subtleties.

The deftness of the TV's colour and greyscale performance hardly diminishes at all during predominantly dark scenes, thanks to a barnstorming contrast and black level prowess. It doesn't hit the same black level depths that an OLED TV is capable of, but its local dimming system is good enough to leave images nice and punchy, especially when you factor in the screen's rich colour palette.

The 75X9405C achieves its dynamism while suffering remarkably little with backlight inconsistencies, a failing that hinders some of the brand's more affordable models. I did spot some low-level light 'blooming' around bright

objects during off-axis viewing, but stay reasonably in front of the set and its bright highlights seldom draw attention to the lighting mechanisms making them possible.

Another great trick of this premium display is that it delivers its picture thrills more or less right out of the box, courtesy of probably the best auto-optimisation system in the TV world.

A potential issue when HDR content arrives is that the KD-75X9405C isn't as bright as Samsung's UE65JS9500, and so may not be as well equipped to deliver the full extent of HDR's impact. But the peerless richness of its colours may prove more than ample compensation for a little lost brightness ■

SPECIFICATIONS

3D: Yes. Active
ULTRA HD: Yes. 3,840 x 2,160
TUNER: Yes. Freeview HD, satellite
CONNECTIONS: 3 x USB; 4 x HDMI; CI slot; RF in; Scart; composite video in; component video in; optical digital audio out; PC audio input; Ethernet; headphone out; integrated Wi-Fi; subwoofer line out
SOUND: 90W (4 x 12.5W, 2 x 20W)
BRIGHTNESS (CLAIMED): N/A
CONTRAST RATIO (CLAIMED): N/A
DIMENSIONS (OFF STAND): 1929(w) x 991(h) x 110(d)mm
WEIGHT (OFF STAND): 56kg
FEATURES: Triluminos panel design; X1 processor; Android TV Smart platform; YouView Smart platform; Magnetic Fluid speaker design; hi-res audio playback with FLAC and WAV support; optional wireless subwoofer; X Reality PRO; X-tended Dynamic Range PRO

HCC VERDICT

Sony KD-75X9405C

→ £6,000 approx → www.sony.co.uk

→ Tel: 0845 6000 124

HIGHS: Peerless sound quality; beautiful, super-sized 4K pictures; stable direct LED system; HDR update promised

LOWS: It's huge; Android TV a bit of a mess

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

AV INFO

PRODUCT: 75in direct LED TV with Android smarts and hi-res audio playback

POSITION: Currently top of the Sony TV pile

PEERS: Samsung UE78JS9500

Meet the plasma exorcist

Panasonic has put to bed the ghost of plasma with this 4K TV champion, says **Steve May**



IT'S TAKEN TIME for Panasonic to refocus from plasma to LCD, but with the CX802 the Japanese giant seems to have cracked the transition. Not only is this the most accomplished LED screen it's ever made, it's one of the finest all-round 4K TVs available.

The CX802 features slick Firefox smart TV skills and comes in four sizes. The iteration reviewed here is the tantalisingly affordable 50in TX-50CX802. Panasonic merits applause for its strategy – some other brands make their top-tier tech off-limits at sizes below 55in.

At the heart of this flagship flatscreen is Panasonic's 4K Studio Master Processing, the brand's most advanced UHD picture engine yet. It's a glorious confluence of image manipulation and wide colour gamut tech.

AV INFO

PRODUCT: LED-lit LCD TV with 4K panel

POSITIONING: Panasonic's top UHD offering

PEERS: Sony KD-55X9305C

I was literally taken aback at just how great the CX802 looks. 2160p pictures are hugely detailed and dynamic, while the screen's black level performance (it uses a VA-type panel) is class-leading. Backlight

uniformity – often a failing of edge-lit screens – is here made a strength. From *The Dark Knight* (Blu-ray) to *Daredevil* (Netflix) you'll find the same elements of nuanced subtlety that made Panasonic's plasma screens so memorable.

The screen does a fabulous job upscaling Full HD, particularly Blu-ray, to 4K UHD. The opening reel of *I Robot* (Blu-ray) takes a street-level look at a wonderful futuristic cityscape. Remapped to 2160p, this sequence boasts an almost photographic realism.

I think the TX-50CX802 looks its best on the Normal preset, which is rich, bright and contrasty, with strong vibrant colour. It's good for most content, with the exception that it overscans. Best then to replicate it using the Custom mode, where you can correct the overscan. I'd also recommend nudging the brightness up +1. I also prefer the Cool 1, slightly blue white balance, over Normal, but there's not a lot in it. Sharpness should be reduced from the default of 50 to around 10 – Will Smith's black beanie and leather duds have wonderful tonality as a result.

Some care needs to be taken with the various frame interpolation modes on offer. The greatest motion clarity can be found with

SPECIFICATIONS

3D: Yes. Active
4K: Yes. 3,840 x 2,160 resolution
TUNER: 2 x Freeview HD; 2 x Freesat HD
CONNECTIONS: 3 x HDMI inputs; 3 x USB; Ethernet; SD card reader; Scart; component/composite AV; digital audio output; CI slot
SOUND: 40W
BRIGHTNESS (CLAIMED): N/A
CONTRAST RATIO (CLAIMED): 'Supreme Contrast'
DIMENSIONS (OFF STAND): 1,121(w) x 652(h) x 46(d)mm
WEIGHT (OFF STAND): 18kg
FEATURES: Built-in dual-band Wi-Fi; USB multimedia playback; DLNA multimedia playback; Local Dimming Pro; 4K Studio Master Pro; 1,600Hz BMR; Super Bright Wide Colour Phosphor panel; Bluetooth remote control; Freeview Play upgradeable; HDR upgradeable; Freesat freetime; Firefox-powered Smart interface including 4K Netflix and Amazon VOD; THX and ISF certified

HCC VERDICT

Panasonic TX-50CX802

→ £1,200 approx → www.panasonic.co.uk

→ Tel: 0844 844 3899

HIGHS: Vibrant, dynamic 4K images; superb Firefox TV OS; Freeview Play compatible; HDR upgradeable

LOWS: Motion handling could be improved; Local Dimming Pro lacks absolute finesse

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

IFC (Intelligent Frame Creation) ramped up, but artefacts become visible on both Mid and Max settings. For movies, the minimum setting proves most effective. It's surprising that Panasonic doesn't offer a user-adjustable menu to manage blur and judder, like its rivals.

The TX-50CX802 is theoretically ready for HDR content. Peak brightness is suggested to hit around 500 Nits. It is also Active 3D capable, and performs well in this regard.

Overall, I'd rank the TX-50CX802 as a fine flatscreen. The Firefox OS is sublime, video performance is superb and value for money is unrivalled ■

Looking on the bright side

Philips continues to impress **John Archer** with this affordable yet talented Full HD 50-incher



AS APPLE IS keen to stress now that it's rolled out a new Apple TV box devoid of 4K/ UHD capability, Full HD television is far from dead. For many people HD remains adequate for their needs – especially as HD TVs are having their prices squeezed by UHD sets.

Philips seems more aware than most of Full HD's ongoing sales potential. It has integrated a wide selection of HD models into its current range and has already impressed us with the 40in 40PFT6510 (HCC #253). Now it's out to prove that HD still matters further up the screen-size ladder with the 50in PFT6550.

Everything about this set's design exudes quality, from the metallic frame to the illuminated Philips logo and brushed

aluminium pedestal. Plus there's the small matter of 'Ambilight' technology, which here uses arrays of LEDs on three of the TV's rear edges to throw coloured light onto your walls that matches the content of onscreen images.

Setting up the 50PFT6550

introduces you to Philips' big smart TV feature for 2015: Android TV. I have problems with Android TV's straitjacketed approach, rather ineffectual recommendations engine and its 'quantity over quality' approach to apps, but it's well presented and slick in operation.

Perfect pictures?

Philips Perfect Pixel HD engine combines beautifully with the TV's LCD panel to deliver some outstanding picture quality. The star of the show is my favourite video trait: black level response. As with the majority of Philips' sets at the moment, the 50PFT6550 uses a direct LED lighting system in conjunction with Micro Dimming Pro tech that analyses the content of multiple image zones to come up with optimum contrast and brightness settings. This twin approach works brilliantly. Black level depths during the night sequences at Bond's Skyfall home (*Skyfall*) are superb – and targeting such rich black levels doesn't cost the 50PFT6550 anything significant in shadow detail terms. The set also proffers a hefty amount of punch, and bright areas of predominantly dark scenes don't lack impact.

This brightness and black depth serves the Philips' colours well. The tropical island sequences in *Despicable Me 2* explode off the

SPECIFICATIONS

3D: Yes. Active
4K: No. 1,920 x 1,080
TUNER: Yes. Freeview HD
CONNECTIONS: 4 x HDMI; component video input; composite video input; 3 x USB; Ethernet port; RF input; optical digital audio output
SOUND: 20W
BRIGHTNESS (CLAIMED): 350cd/m2
CONTRAST RATIO (CLAIMED): N/A
DIMENSIONS (OFF STAND): 1,124(w) x 647(h) x 77(d)mm
WEIGHT (OFF STAND): 13.3kg
FEATURES: Android TV smart interface; USB multimedia playback and recording; Perfect Pixel HD processing engine; ISF support; built-in Wi-Fi; USB/DLNA media file playback; three-sided Ambilight

HCC VERDICT

Philips 50PFT6550

→ £600 approx → www.philips.co.uk

→ Tel: → Tel: 0207 949 0319

HIGHS: Excellent all-round picture quality; good price for what's on offer; relatively slick and stable Android TV implementation

LOWS: Minor backlight clouding; occasional noise over detailed areas; Full HD res; Android TV can be clunky; complex settings

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

screen. Precise colour handling and stunning sharpness mean sometimes it feels like you're watching pictures higher in resolution than 'mere' Full HD. And, unlike some Philips TVs I've seen – usually ones that use a lower-powered processing suite – this impeccable sense of sharpness doesn't leave pictures appearing noisy.

You can call upon Philips' Perfect Natural Motion feature to help motion remain crisp and clean without the image falling to pieces. Unwanted digital side effects are generally absent here if you don't ramp PNM too high.

Provided you're content with the 1,920 x 1,080 resolution and are happy to tinker (some out-of-the-box settings here are too aggressive), this is another strong offering from Philips and decent value ■

AV INFO

PRODUCT: High-end Full HD TV

POSITIONING: Roughly in the centre of Philips' 2015 range

PEERS: Sony KD-55W805; Panasonic TX-50CS520

OLED increases its appeal

This curved, 4K style icon from LG has **John Archer** hot under the collar



THE COMBINATION OF this OLED TV's insanely thin body and distinctive curved screen make it one of the prettiest TVs in town. And its picture performance isn't ugly either.

Spend time setting up the 55EG960V and it delivers on OLED technology's contrast promise (since it uses self-emissive pixels rather than a shared external backlight) spectacularly well. Take, for instance, the infamously dark scene where The Bride is buried alive in *Kill Bill: Volume 2*. There's no hint of the grey mist effect that's always present to some extent on any LCD TV, and this groundbreaking black level is achieved without any backlight inconsistency or clouding. What's more, when The Bride

manages to get her torch on, the 55EG960V does an incredible job of rendering the torchlight while keeping the dark picture that surrounds it looking rich and natural.

The 55EG960V is also capable of serving up gorgeous colours. The vibrant sequence where The

Bride fights Vernita Green in *Kill Bill: Volume One* is a riot of colour, and for the most part, this riot doesn't tip over into an unruly free-for-all of unbalanced, unnatural tones.

Also easy on the eye is the way LG's OLED TV delivers the detail and depth we've come to associate with native 4K content. You can see every blade of grass, every bead of sweat and every tattoo on our stunning 4K World Cup footage. It's a respectable upscaler of non-HD material, too.

None too bright

The simple pleasure of seeing a screen able to deliver a contrast range as extreme as the 55EG960V may have some of you already reaching for your wallets. But before you hand your cash over, there are a few issues to report.

The strangest of these concerns that phenomenal black level response. Bizarrely, despite OLED technology's self-emissive nature, if you push the TV's brightness setting too high – anywhere beyond its mid point – those blacks suddenly dissolve into a most unOLED-like greyness. Increasing the brightness past the 50 per cent 'safe zone' also causes the appearance of a distracting banding effect, where the screen's brightness reduces in clearly defined steps from the centre outwards. You can occasionally notice this issue even with the brightness restrained,

in the form of a slight vignetting effect at the edges of bright, motion-packed content.

You can calibrate out the 55EG960V's unexpected problems – but only, of course, at the expense of a chunk of brightness. And, even though this set is HDR-ready (for net streams only, not UHD Blu-ray), it lacks the native brightness punch of rival LCD models.

Still, firing up *The Box Trolls* in 3D results in one of the best 3D performances I've seen. There's no serious flicker or crosstalk, while the screen's 4K panel counteracts the reduced resolution usually associated with passive 3D. Motion suffers slightly with judder, but otherwise the 55EG960V's 3D performance is stellar.

All told, this is a superior screen. And with price reductions making it available for around £2,500, a very tempting one, too ■

SPECIFICATIONS

3D: Yes. Passive
ULTRA HD: Yes. 3,840 x 2,160
TUNER: Yes. Freeview HD, satellite
CONNECTIONS: 3 x USB; 3 x HDMI; CI slot; RF in; Scart; composite video in; component video in; optical digital audio out; PC audio input; Ethernet; RS-232C; headphone out; integrated Wi-Fi
SOUND: 20W
BRIGHTNESS (CLAIMED): N/A
CONTRAST RATIO (CLAIMED): N/A
DIMENSIONS (OFF STAND): 1,226(w) x 719(h) x 49.9(d)mm
WEIGHT (OFF STAND): 15.3kg
FEATURES: USB multimedia playback; DLNA support; OLED self-emissive pixel technology; webOS 2.0 Smart system; Tru HD Ultra Engine; ColourPrime panel; Dynamic Colour Enhancer

HCC VERDICT

LG 55EG960V

→ £2,500 approx → www.lg.com/uk

HIGHS: Jaw-dropping, pixel-perfect contrast; spectacular design; rich colours; decent price

LOWES: Some brightness uniformity issues; occasional colour imprecisions; no UHD HDR Blu-ray support

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

AV INFO

PRODUCT:
55in 4K/Ultra HD OLED TV

POSITION:
Now joined by flat 55in and 65in EF950V OLED models in LG's range

PEERS:
Samsung UE55JS9500;
Sony KD-55X9305C



The force awakens!

Onkyo's TX-NR3030 is a 3D audio powerhouse. [Steve May](#) joins the rebellion

AV INFO

PRODUCT:
11.2-channel
Atmos-enabled
AV receiver

POSITIONING:
Onkyo's biggest,
baddest AVR

PEERS:
Denon AVR-
X7200WA;
Pioneer SC-LX89

ONKYO'S BRAWNY TX-NR3030 boasts an indulgent 11.2-channel design. Without the need to resort to any extra amplification (which is currently the solution proffered by its main rivals), you can install the TX-NR3030 in a premium 7.2 configuration with four Dolby Atmos channels (literally) on top. That's like ordering a sticky toffee pudding and adding a spotted dick garnish.

Design-wise, the TX-NR3030 emulates the clean lines found elsewhere in the brand's 2014/15 lineup. An info-packed status display is flanked by volume knob and power button, while menu functionality and bonus inputs (HDMI/MHL, USB, phono AV and digital optical audio) are tucked behind a fascia flap.

Rear-placed connectivity includes seven HDMI inputs, all 4K compatible up to 60fps, with one input (HDMI 3) being HDCP 2.2-ready. These route to three HDMI outputs, which typically would be used to feed TV and projector in a cinema room, with the

third providing video to a second viewing zone. HDMI passthrough lets any designated connected source journey through the AVR when it's in standby, so the system doesn't need to be powered just to watch *Loose Women* from a connected STB.

You can network the Onkyo via wired Ethernet or Wi-Fi; two antennas sit on the rear. You can also stream over Bluetooth. If your source material is more old school, take comfort from the forest of legacy inputs. There are two component video inputs and six digital audio options (three coaxial, three optical). Helpfully, anything you connect will be upscaled and squirted out over HDMI, courtesy of a Qdeo chipset from Marvell. There are also 11.4-channel pre-outs, and balanced stereo XLR pre-outs.

Build quality is admirable. The chassis itself is nicely finished, while beneath the bonnet you'll find a trio of transformers (maybe they're called Optimus Prime, Bumblebee and

Ratchet...), decoupled amplification and processing modules, plus seven 32-bit Burr-Brown D/A converters. Functionality is similarly impressive – streaming service support includes internet radio, Aupeo!, Spotify and Deezer – while file compatibility is broad. The receiver is DLNA-ready, enabling it to stream from connected NAS devices, PCs and connected USB drives. All common audio codecs and containers are supported, including MP3, WMA, WAV, AAC, OGG, FLAC and DSD. For those living in a time warp, there's also an analogue radio tuner.

The TX-NR3030 boasts many labels, one of which is THX Select2 Plus (Ultra2 certification is found on Onkyo's separate power amp/processor pair). This means you

'Not only is Onkyo's TX-NR3030 addictively dynamic, it's also incredibly light on its feet'

can take advantage of THX post-processing should you like that sort of thing (and who doesn't?). THX Surround EX, for 7.1 from 5.1 sources, is particularly effective, and Dolby Surround will map incoming sources to an Atmos speaker array. There's also an assortment of Movie, Music and Game modes, as well as a Pure Audio mode which turns off both the video display and analogue video circuit. To simply hear all content as delivered by the source, opt for Direct.

AVR setup is via Onkyo's own AccuEQ system, using a supplied mic. It's not the most sophisticated auto calibration in the world, but necessary to help the renderer in the AVR know what loudspeakers are attached. Don't feel obliged to keep the resulting system settings. I got my best results when I went off-piste. Tweaking can be a pleasure.

Bring on the bombast

Hunger Games: Mockingjay Part 1 (Blu-ray) may not be big on inflammatory action sequences, but the subtle embellishments evident in its Atmos soundtrack really add to the viewing experience. When Katniss hops in a hovercraft to visit bombed-out District 8, you feel as if the ship's gusting turbines are blowing debris into the corner of your room. When her ride takes off, you'll expect the roof to follow.

The ensuing hospital action sequence is a sonic thriller: air raid sirens fill the Atmos height channels, before anti-aircraft fire throws rubble behind your head. As if the Panem bomber fly-overs aren't visceral enough, goosebumps are well and truly raised when Everdeen scene-steals with her retaliatory arrow take-down. The downed craft smashes

centre left, causing a chimney stack to fall the length of the viewing room. It's enough to make you want to throw your popcorn in the air.

Heard in a commercial theatre, Atmos delivers unparalleled image placement. The soundfield is circular, with seamless steering between conventional sonic bed and canopy-like height channels. It's an uncanny, intimate experience. When heard in this 7.2.4 config, the Onkyo iteration comes remarkably close. When the twig breaks in the front right-hand channel during the Atmos trailer *Leaf*, the snap is preternaturally crisp. Said leaf then circles the listening space, demonstrating seamless image panning.

When it comes to power output, Onkyo plays Wattage close to its chest. For the TX-NR3030 it boasts 185W into six ohms with one channel driven, but this will round down when the amp is in full flight. I'm doubtful the Atmos channels are getting anything like that headline figure. That said, there are Putin-like power reserves available. Not only is the TX-NR3030 addictively dynamic, it's also incredibly light on its feet, delivering delicious detail with a delicacy that belies its AV hulk status. But when it needs to raise hell, Lucifer himself is on hand to crank up the volume.

If you're pondering an Atmos upgrade, it's worth noting that there's a very noticeable difference between a x.x.2 and x.x.4 setup. When you're running a single pair of Atmos height channels, immersive balance can be a challenge to achieve unless you're in a relatively small room. What's more, if you upgrade from a standard seven-channel receiver to a 5.1.2 Atmos equivalent, you'll quickly become aware that there's a gaping hole at the back of the soundfield where your rear backs used to be. Thankfully that sacrifice doesn't apply with the 11-channel TX-NR3030. The traditional wraparound DTS-HD MA and TrueHD 7.1 soundfield is still available, augmented by a four-channel fug of Atmos which doesn't so much pour from the ceiling as permeate the ether.

Sans Atmos, the AVR's DTS-HD MA performance (there's no DTS:X provision here) is exemplary. When the Golden Army rise in *Hellboy 2*, the clattering, thumping automatons have all encompassing, rafter-raising weight. This is classic multichannel home cinema at its best. It's also a solid hi-fi performer – two-channel hi-res audio offers pronounced articulation. There's nothing heavy-handed or loopy about its imaging.

Practically purrfect

The TX-NR3030 is able to leave any sourpuss grinning like a Cheshire cat. I awaited an integrated Dolby Atmos 7.2.4 solution and it doesn't disappoint. It's lithe and musical, muscular when it needs to be (although not overly brawny), and in full 7.2.4 it's consistently, insanely entertaining ■

ON THE MENU



→ Not the most colour-rich of UIs, but setup options are plentiful and the layout is sensible

SPECIFICATIONS

DOLBY ATMOS: Yes, Plus Dolby TrueHD

DTS: X: No. DTS-HD Master Audio

THX: Yes, Select2 Plus

MULTICHANNEL INPUT: No

MULTICHANNEL OUTPUT: 11.4 pre-outs

POWER OUTPUT (CLAIMED): 11 x 185W (6 Ohms)

MULTIROOM: Yes. Three zones

AV INPUTS: 4 x composite; 6 x digital audio (3 x optical and 3 x coaxial)

HDMI: 8 x inputs; 3 x outputs (v2.0)

VIDEO UPSCALING: Yes. To 2,160p

COMPONENT VIDEO: 2 x inputs; 1 x output

DIMENSIONS: 435(w) x 466.5(d) x 199(h)mm

WEIGHT: 22kg

ALSO FEATURING: AccuEQ auto-calibration with setup microphone; Bluetooth; integrated 2.4GHz Wi-Fi; Spotify Connect; internet radio; AM/FM tuner; HDCP 2.2 copy protection input/output; Qdeo video processing; twin LFE outputs; 12V trigger for zones 2/3; RS232; balanced L/R pre-outs

HCC VERDICT



Onkyo TX-NR3030

→ £2,500 Approx → www.uk.onkyo.com

→ Tel: 08142 4208 11

HIGHS: Uncompromised DTS-HD MA/TrueHD 7.1 performance allied to a quartet of atmospheric Atmos channels; lively, dynamic sound; great with all sources; HDCP 2.2 compliant

LOWES: Sometimes sluggish UI; not as beefy as some 9.2 competitors; no Auro-3D/DTS:X

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

On the edge of tomorrow

Steve May welcomes Denon's future-proofed top-flight AV receiver into his home cinema



DENON'S AVR-X7200WA APPEARS

deceptively conservative – its design is prim and uncluttered. Looking at it, you wouldn't know it was one of the most cutting-edge multichannel audio machines on the market, but beneath the bonnet is a fevered frenzy of tech, promiscuously embracing every aspect of home cinema technology known to man, from immersive 3D audio to 4K HDMI.

The AVR-X7200WA is a nine-channel design, but can handle up to eleven channels with the help of additional amplification. Naturally, it's Dolby Atmos-enabled out of the box. It's also firmware upgradeable to Auro-3D, and will similarly accommodate DTS:X. There's room for both firmware top-ups, so you won't need to choose between them.

A word of clarification. In all likelihood, new buyers will end up bagging an AVR-X7200WA. This is an updated iteration of the AVR-X7200W, featuring HDCP 2.2 copy protection required for use with UHD Blu-ray and broadcast services when they begin. The 'A' suffix indicates there's the latest Panasonic

HDMI interface on board, which offers HDCP 2.2 with full 4:4:4 colour subsampling. If you have a first-generation X7200W, Denon offers an upgrade which requires a physical board swap, at a cost of £150.

Auto calibration is provided through

Audyssey MultEQ XT32. This can measure up to eight points around the listening position and proves to be pretty useful, thanks to a variety of filtered modes. Reference has a slight roll off, to remove the sibilance found on some movie soundtracks; L/R Bypass removes Audyssey processing from the front left/right channels (possibly a good option for music), while Flat adjusts calibration for playback in smaller rooms. Naturally, you can defeat the whole shebang if you want. In my listening room, MultEQ had a pronounced impact on the tonality of dialogue (better with than without). It's certainly worth experimenting with the various options.

Dancing on the ceiling

The AVR is rated at 150W-per-channel (into 8 Ohms) in multichannel mode. However, when run two-channel there's a huge spike in muscle – it's as if Dwayne Johnson has just usurped the volume control. Consequently, take care when hoping from multichannel playback to stereo. The aural jolt to your nervous system is one thing; your speakers may not recover quite so quickly.

Atmos Blu-rays beguile. Sonic imaging within the hangar in *The Hunger Games: Mockingjay* is epic. The Dolby Surround mode, which scales everything to take advantage of Atmos height processing, is also entertaining. With *Queen Live at the Rainbow '74* (CD), it does a great job of recreating the confines of the Finsbury Park venue without the need for exaggerated delay, so common with traditional DSP. Roger Taylor's skins are locked centre-stage, while Brian May's riffing guitar appears to bounce off the walls before chomping left and right.

AV INFO

PRODUCT: 9.2-channel Dolby Atmos home cinema receiver

POSITIONING: The highest specified of Denon's current AVR range

PEERS: Onkyo TX-NR3030; Pioneer SC-LX89

SPECIFICATIONS

DOLBY ATMOS: Yes

DTS: X: Yes, via firmware

THX: No

MULTICHANNEL INPUT: Yes. 7.1

MULTICHANNEL OUTPUT: Yes. 11.2 pre-outs

POWER OUTPUT (CLAIMED): 9 x 150W (into 8 Ohms)

MULTIROOM: Yes. 3 zones

AV INPUTS: 5 x composite; 5 x digital audio (2 x optical; 2 x coaxial; 1 x Denon Link HD)

HDMI: 8 x inputs; 3 x outputs (v2.0)

VIDEO UPSCALING: Yes. To 3,840 x 2,160

COMPONENT VIDEO: 3 x inputs; 1 x output

DIMENSIONS: 434(w) x 437(d) x 195(h)mm

WEIGHT: 17.1 kg

ALSO FEATURING: Integrated Bluetooth and Wi-Fi 2.4GHz; twin subwoofer output; Apple OS and Android control apps; iOS wireless sharing; Audyssey MultEQ XT32 Pro Room EQ with LFC; audio file playback including FLAC and DSD; Ethernet; 2 x USB; Apple AirPlay; 12V trigger, AM/FM tuner; Spotify Connect; HDMI passthrough in standby; DTS:X support planned via firmware; Auro-3D optional firmware upgrade available

HCC VERDICT

Denon AVR-X7200WA

→ £2,500 approx → www.denon.co.uk

→ Tel: 02890 279830

HIGHS: Inclusive codec support; 4K HDMI with HDCP 2.2 support; dynamic multichannel delivery; versatile nine-channel design

LOWS: Limited online music service options; no THX processing; only the AVR-X7200WA model supports HDCP 2.2 out of the box

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Not that you need 3D audio to justify buying the AVR-X7200WA. Its performance with regular multichannel is heroic enough. Fed undiluted DTS-HD Master Audio, this receiver sparkles. As the Tesseract (*Avengers Assemble*, Blu-ray) turns itself on, there's a luscious deep LFE power surge, and dynamic energy arcs across the back channel before Loki's arrival. Something portentous is about to occur, and this Denon hammers home the point with weight, poise and efficient power ■

An AVR with a purpose

Danny Phillips runs the rule over Cambridge Audio's performance-focused CXR120



WITH ITS LATEST pair of receivers, the CXR120 and CXR200 – its first new models since 2013's Azur 751R – Cambridge Audio has given next-gen formats the cold shoulder, opting instead to make sound quality the priority. Trading on performance alone is a bold move in a fiercely-contested marketplace, particularly with models from the larger brands offering a superior spec for a similar price. Can Cambridge Audio make it work?

The 7.2-channel CXR120 may be the cheaper and least muscular (120W p/c rather than 200W) of the two AVRs, but with a £1,500 tag we're near high-end territory. Most of that money goes towards a formidable array of high-grade components, including a discrete class A/B amp design, an oversize low-flux toroidal transformer and Cirrus Logic 3-core 32-bit DSP chip. Connectivity is fine without going overboard. There are six HDMI inputs on the back with support for HDCP 2.2, 4K and 3D, while the front port is MHL-compatible. Dual HDMI outputs drive two displays at once, but separate Zone 2 output is held back for the CXR200.

The feature list includes 4K scaling, Wi-Fi, DSD playback via HDMI, Spotify Connect and network audio streaming. The latter is handled by the same StreamMagic module found in Cambridge's CXN network player. Format support from

uPnP devices includes hi-res FLAC, ALAC, AIFF and WAV up to 192kHz/24-bit. I wouldn't expect less from a brand with a hi-fi heritage.

Streaming is available through Android/iOS app – you can't do it onscreen using the physical remote. The latter is easy to navigate and the app is also pleasant to use, allowing you to control Spotify playback, switch sources and adjust volume. However, limited access to the CXR's audio functionality means you can't ditch the physical handset completely.

Stiff upper lip

I hooked up the CXR120 to a Monitor Audio 5.1 package and they formed a cracking all-Brit combo. The sound is refined yet entertaining, and the CXR120 maintains a stiff upper lip no matter how much you provoke it. In fact, it actually thrives on being pushed. At middling volumes it can sound a little clinical, but gets more assured as the dial creeps clockwise.

The receiver tears into *Star Trek Into Darkness* with agility and enthusiasm. As Kirk and Bones dart through the undergrowth on Nibiru, the receiver's considerable drive and punch keeps excitement levels high, married to a natural, insightful presentation. When we move inside the volcano, the amp starts to flex its muscles. Thick waves of LF thunder into the room as the lava rises and the mid-range roars. Dialogue also shines.

Swapping spaceships for simians, the CXR120 shows its softer side with *Dawn of the Planet of the Apes*. As Caesar stalks a herd of deer in the movie's opening scene, the CXR120 performs a breathtaking display of detail clarity, with hissing rain, creaking branches and breathing apes bristling from every speaker.

SPECIFICATIONS

DOLBY ATMOS: No. Dolby TrueHD

DTS:X: No. DTS-HD MA

THX: No

MULTICHANNEL INPUT: Yes

MULTICHANNEL OUTPUT: No

POWER OUTPUT (CLAIMED):

7 x 120W

MULTIROOM: No

AV INPUTS: Yes. 4 x digital audio (2 x optical and 2 x coaxial); 3 x analogue stereo

HDMI: Yes. 7 x inputs; 2 x outputs (all v2.0 on the back panel – front input is v1.4 for MHL)

VIDEO UPSCALING: Yes. To 4K

COMPONENT VIDEO: No

DIMENSIONS: 430(w) x 165(h) x 420(d)mm

WEIGHT: 13.2kg

ALSO FEATURING: HDCP 2.2 support; Wi-Fi with supplied antenna; StreamMagic uPnP streaming; Spotify Connect and internet radio; 3D & 4K passthrough; Cambridge Connect app; DSD playback via HDMI; asynchronous USB audio input; optical Bluetooth module; MP3, WMA, AAC, WAV, FLAC, ALAC, AIFF, HE AAC, AAC+, OGG Vorbis file support; front height speaker support from Pro-Logic IIz; twin display output; Cirrus Logic DSP; iOS/Android app

HCC VERDICT

Cambridge Audio CXR120

→ £1,500 approx → www.cambridgeaudio.com

→ Tel: 0333 900 0093 (Richer Sounds)

HIGHS: Keeps composure at high volumes; lots of detail; big, weighty soundstage; musical stereo performance; gorgeous design and build

LOWS: Lacks Dolby Atmos and DTS:X; can't access network features onscreen; polite at lower volumes; app offers limited audio controls; Bluetooth is optional extra

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

AV INFO

PRODUCT:
7.2-channel
AV receiver

POSITION:
The more affordable
of two new
Cambridge
Audio models

PEERS:
Yamaha RX-A2040;
Denon AVR-X4100W;
Onkyo TX-NR838

And the CXR120 is a very musical performer. An 88kHz/24-bit version of Daft Punk's *Give Life Back To Music* sparkles with detail in the hi-hats and guitar licks, while the metronomic drum kicks and bass exhibit supreme timing.

Cambridge Audio is asking you to trust in the CXR120's performance when you hand over your credit card. I'd say it rewards that trust well ■

Cinema turned up to eleven

Yamaha's flagship Aventure processor offers **Richard Stevenson** an instant next-gen AV upgrade



YAMAHA IS NO stranger to 11 channels of fun. From 2008's mighty Z11 amplifier to the more recent CX-A5000, the company hasn't been shy about adding extra channels to native surround sound formats. Yet the CX-A5100 reviewed here goes a step further by introducing Dolby Atmos and DTS:X decoding to its *War and Peace*-esque feature list.

As indicated by the model number, the CX-A5100 is an evolution of its predecessor rather than a complete revolution, yet look around the back and you'll discover the connection department has had an overhaul, dumping S-video sockets and adding XLR connections for the two subwoofer outputs. Wi-Fi and Bluetooth are now integrated too, and the rear 7-in/2-out HDMI section (there's a front input, too), is 2.0a spec boasting 4K/60p and HDCP 2.2 compatibility.

Another upgrade, and now out there at the cutting-edge of AV awesome, is the YPAO setup procedure. Based on 64-bit signal processing and using Yamaha's 3D mic stand, the process is swift and so accurate there is no need to even preset speaker patterns before

starting. YPAO finished, the key question is what EQ setting to run – Off, Manual, Flat, Front or Natural. Manual offers eight parametric filters, each with frequency, gain and Q control, for every one of the main eleven channels, so is an

option for those with a spare month or two. With my Atmos setup (7.2.4), EQ in 'Flat' mode created a near ruler response across the main channels, which in a slightly live room came across a bit frisky and bright. 'Natural' mode offered a little less EQ intervention and hit a real sweet spot of spacey atmospheric, huge soundstage and balanced frequency response.

This was aptly demonstrated with the Atmos soundtrack to *Jupiter Ascending*. The CX-A5100 delivers a sound at absolutely full-throttle, creating an adrenaline rush of sharp effects and massive LF explosions, with a top-end edge that etches everything from glass smashing to dialogue with a gritty reality. As Caine battles the Sargorn hand-to-hand with the industrial planet collapsing around them, the Yamaha laps up the challenge of recreating the audio chaos through all channels. It is a BIG sound, with unrivalled clarity and separation of effects from every direction. When Jupiter fights Eddie Redmayne's fabulous baddie Balem Abrasax you feel every blow. Just try watching her hit him repeatedly with the iron bar without wincing.

The CX-A5100 is certainly no laid-back smoothie of a processor, then. It revels in action and adventure with a passion bordering on obsession. Partner it with Yamaha's equally lively-sounding 11-channel MX-A5000 amp (HCC #228) and the effect is blisteringly frantic. Actually, I found the balance of the combo setup, particularly in Flat EQ mode, a little too raw and edgy, and a bit fatiguing after extended listening. *Shaun the Sheep Movie* (5.1 DTS) felt light and forward-balanced rather than warm and enveloping, and personally I prefer the more fluid presentation of Marantz's

SPECIFICATIONS

DOLBY ATMOS: Yes
DTS:X: Yes (via future firmware update)
MULTICHANNEL INPUT: Yes. 7.1 plus phono MM
MULTICHANNEL OUTPUT: Yes. 11.2-channel (balanced XLR and unbalanced phono)
MULTIROOM: Yes. Zone 2, 3 & 4 and MusicCast
AV INPUTS: 6 x composite; 6 x digital audio (3 x optical and 3 x coaxial)
HDMI: 8 x inputs; 2 x outputs (HDMI v2.0a)
VIDEO UPSCALING: Yes. To 2,160p
COMPONENT VIDEO: 3 x inputs; 1 x output
DIMENSIONS: 435(w) x 474(d) x 192(h)mm
WEIGHT: 13.5kg
ALSO FEATURING: 64-bit YPAO EQ; MusicCast integration; AirPlay; native Apple Lossless and DSD support; Wi-Fi and Bluetooth; Apple iOS and Android control apps; USB with iPod compatibility; Ethernet; FM and internet radio tuner; Pure Direct sound mode; Aventure design and construction; ESS Sabre Ultra DACs for all channels; 2 x 12V triggers; 4K passthrough; Cinema DSP; Compressed Music Enhancer

HCC VERDICT

Yamaha CX-A5100
 → £2,500 approx → www.yamaha.co.uk
 → Tel: 0844 811 1116
HIGHS: Fast and exciting sound; YPAO EQ; highly tweakable; cutting-edge HDMI and networking; MusicCast
LOWS: Perhaps a bit too fast and exciting for some; complex to set up; dated GUI

Performance ★★★★★
Design ★★★★★
Features ★★★★★
Overall ★★★★★

AV INFO

PRODUCT:
11.2-channel
3D audio
AV processor

POSITIONING:
Yamaha's flagship
AV product

PEERS:
Marantz AV8802A;
Onkyo PR-SC5530

AV8802A (p52). That processor costs fully £850 more, though, and doesn't have a matching 11-channel power amp. Hmm.

Obvious upgrade

There is no denying the CX-A5100's appeal. It offers home cinema enthusiasts plenty to experiment with – particularly the sheer scope of adjustment in the new YPAO implementation – and is an obvious upgrade to any processor unable to cut it in today's world of 3D audio formats and 4K video. Sonically, it's a high-octane star ■

Plenty to play with

Pioneer returns to the sub-£500 AVR killzone with a seven-channel Dolby Atmos model packing Bluetooth, Wi-Fi and app control. **Mark Craven** reports



IN 2014, PIONEER dipped its toes into the Dolby Atmos waters, but only with its upper-tier LX-branded receivers. In 2015, it's lowered its entry price for 3D audio in the shape of the 7 x 150W (six ohm) VSX-930.

As well as Atmos, buyers get a level of tweaks, modes and functionality far greater than they might expect from a £350 amp. The AVR integrates Spotify Connect and vTuner internet radio, and flaunts AirPlay and HTC Connect compatibility. Naturally, it will play media files stored on your home network or from USB. Hi-res audio support extends to DSD, 192kHz/24-bit FLAC, WAV, AIFF and Apple Lossless, and multichannel WAV and FLAC. Bluetooth and Wi-Fi are built in, and the iControl AV5 app is an alternative to the rather slow user interface and complex handset.

Pioneer's precise spirit

With upfiring speakers to deliver Atmos height for a 5.1.2 setup, the Pioneer proves to be a precise listen, retaining a controlled edge rather than letting itself get carried away. The Atmos mix on *American Sniper* is endowed with copious front-to-back object tracking and FX placement. When Kyle is on the gun-range during early training, the shots

of his colleagues left and right zip towards their offscreen targets with speed and clarity.

Multi-layered, bombastic movie moments are deftly handled. The over-the-top, longwinded car/plane chase/fight sequence from *Fast & Furious 6* is presented as a composed barrage of squealing tires, throaty engines and pulsating score. Foley effects are cleanly picked out. And when Dominic Toretto (Vin Diesel) unloads his pump-action shotgun within the plane's cargo hold, it packs a metallic, largescale punch.

Switching off the settings delivered by the MCACC EQ system reduced the tightness and clarity of the dialogue channel, but did return some body to the front stage. It also seemed to smear some of the amp's directionality; MCACC no doubt works hard to

fettle your surround field. The sound overall is rather clinical, however. Other AVRs have a more airy, diffuse, spacious sonic signature.

Last up on my movie list was John Carpenter's *Halloween*. This has a frankly terrifying but very uncluttered soundmix, and the VSX-930 delighted in conveying the synth-delivered jump scares.

Two buttons on the handset are key for fiddlers – Audio P(arameter) and Video P(arameter). The former brings up a list of features, and is where you can call up different saved MCACC presets, activate the Sound Retriever Function, select Standing Wave and Phase control, etc. There's a lot less going on in the Video menu, but don't ignore it. Here, the amp offers 4K upscaling, which is set to be automatically employed. 4K display owners should experiment – I noticed (albeit from close quarters) the Pioneer imparting some unwanted pixel information around edges.

As a low-cost AV receiver, the VSX-930 gets a lot of things right. It handles movie mixes with poise, makes Atmos easy and caters for various music demands. No DTS:X support, though ■

HCC VERDICT

Pioneer VSX-930 → £350 approx

Overall ★★★★★

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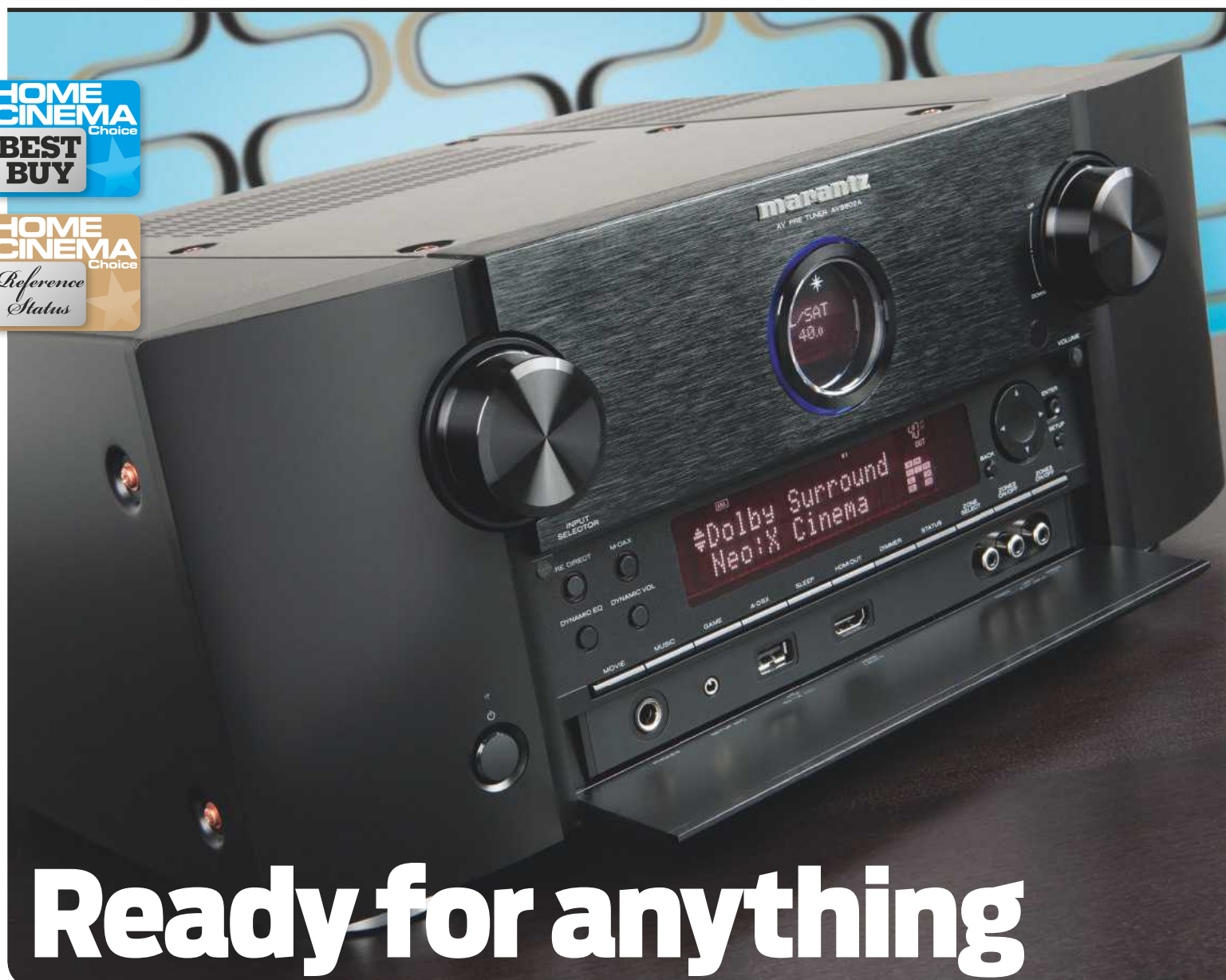


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Ready for anything

Richard Stevenson finds his movie and music needs satisfied by Marantz's top-flight processor

AV INFO

PRODUCT:

Networked 11.2-channel AV processor

POSITIONING:

The flagship model from the D&M stable

PEERS:

Onkyo PR-SC5509; Arcam AV950; Anthem AVM 50v

WHAT WE HAVE here is a bang-up-to-date 11.2-channel AV preamp with Dolby Atmos decoding, Auro-3D available as an optional firmware upgrade and the promise of a DTS-X upgrade at any minute. This is Marantz's ultimate statement on the art of home cinema, currently taking over Denon's mantle of the big cheese of AV in D&M's portfolio. Ironically, during this audition Marantz's marvel replaced a much vaunted – although long in the tooth – Denon AVP-A1HDA.

Straight out of its enormous cardboard box, the AV8802A settles itself on to my equipment rack with purposeful menace and muscular build quality. It's not got the size, weight or sheer metal content of the outgoing Denon, but let's not forget it's not much more than half of the AVP-A1HDA's original £6,000 price tag either. Much of the menace comes from its slab-like black fascia, with several different textures going on, and a knob and badge combo that looks like a triple-eyed

beastie. In typical AV receiver and processor style, a large drop-down flap on the front reveals a number of buttons and ports, and the back panel is packed with connections. Essential for a processor with high-end ambitions is the long row of balanced XLR outputs. Count 'em – there are 15. While this processor will only output 11.2 channels at any one time the additional connections can be user-configured. So, for example, you can have 7.2.4 – with four Dolby Atmos ceiling speakers – and have front height speakers connected and simply switch between the two depending on content.

The HDCP 2.2-compatible HDMI array is eight-in and three-out, with ARC on one of the outputs. There is also a raft of component video connections, a 7.1-channel input stage and normal phono connections to your power amplifier(s) should they not have balanced inputs. A hardwired network connection, as well as built-in Wi-Fi and Bluetooth, caters

for network audio features including AirPlay and control via Marantz's rather funky app.

One thing missing is a USB-B input. This means those wanting to hookup a laptop will almost certainly have to connect to the Marantz wirelessly rather go in directly to its on-board DACs. Needless to say this processor handles pretty much any music and AV audio format you care to throw at it, from humble MP3 up to 2.8MHz DSD and everything Dolby and DTS in between.

The AV8802A will pass 4K/Ultra HD at 50Hz/60Hz with full 4:4:4 sub-sampling. It can upscale 1080p content to 4K and transcode HD and SD analogue sources too. If that

'Natural, immersive and free from added character – this could easily be the reference for cinema sound'

doesn't excite your video imaging juices, then the processor is also certified by the Imaging Science Foundation and sports a gamut of advanced ISFccc video tweaking controls.

Setting up and connecting the Marantz is made easier by the colourful GUI setup wizard that guides you through every connection step-by-step. Considering the sheer number of terminals and cable ends one is likely to be juggling, it's useful even if you're an old hand at cooking up processors. For room EQ, you get Audyssey's flagship Platinum Suite with MultEQ XT32. The system uses eight measurements to average a soundfield around your listening position, ironing out hotspots so more people can enjoy the show.

It's got the wow factor

Listening to the Marantz for the first time I really wanted to be wowed. And, man, I was wowed. I was wowed enough to want to spend the rest of my life kicking back and enjoying one of the most sophisticated and detailed multichannel sounds that has ever graced my listening room.

Having been used to the AVP-A1's penchant for the dramatic and its ability to turn a family comedy into a high-octane ride, the Marantz approaches its task with a wholly different attitude. It is all about the subtle, all about the detail and all about crafting an experience with nothing added and nothing taken away. It's a clichéd phrase, but I reckon this processor gets oh-so-close to how any director would have intended their film to sound. The balance is so natural and immersive, and free from added character, that this could easily be the reference point for home cinema sonics.

With my extensive back catalogue of Blu-ray favourites, letting the Marantz's Dolby

Surround mode upscale the 5.1 and 7.1 soundtracks to a 7.2.4 Atmos experience is a complete no-brainer. Unlike processed height and width channels where I constantly turn the effects on or off depending on the movie, I left the AV8802A in audio upscale mode for movies all of the time. It really is impressive how even content with no original overhead material gains immense height – or, rather, vertical depth. There is no vagueness to the sound brought about by artificial channel processing – it's clean, crisp and with added height. It's quite amazing.

Switch to Dolby Atmos-encoded content and the sound steps up another notch. *Gravity* on Blu-ray proves simply breathtaking – quite literally. Through the many air-less sequences, and particularly when the lander is filling up with water, I found myself holding my breath. The detailed soundscape of the enclosed space, changing as the water comes in, is captivating and believable. Those 11 channels subtly fool you into thinking you are right there.

The natural balance is the perfect match for *Gravity*'s thoughtful soundtrack, but could it play hardball too and deliver a supercharged adrenaline rush when required? I cued up *The Expendables 2* to find out – and by the end of the opening sequence I was in fits of laughter at the spectacular dynamic range and lung-crushing bass effects that the AV8802A delivered in spades. Its abilities are not genre- or volume-dependent, they are simply scalable. If anything, *The Expendables 2*, thanks to the Marantz's ability to disentangle a soundtrack, sounded even better than it did on the old Denon. Where the latter would generate a spectacular and impressive wall of sound, the Marantz manages to get deeper into the chaos, revealing effects that I hadn't previously even realised were there.

The overall width, depth and height of the soundstage seems huge. This film's audio is horrifically compressed to the point where voices are as loud as gunfire, and it can feel like you're simply being battered by your own speakers after a while. Yet the Marantz seems to recreate something of the missing dynamic range purely by its ability to highlight each and every component. I was convinced the Denon was going to kick the AV8802A off the kit rack with action fare, but how wrong could I be? Its subtleties and detail massively reduce the fatiguing barrage of noise of some of the more gung-ho movies and play to the strengths of atmospheric actioners like *American Sniper*.

Making a statement

The AV8802A brings audiophile-quality processing into a multichannel environment and for a reasonable cost. To put my money where my mouth is, I will be buying one and consigning my Denon AVP-A1HDA to history. And, I'll bin my high-end two-channel preamp as well. It is simply that good with music, too ■

ON THE MENU



→ Marantz's control app (pictured) is wonderfully uncluttered and a good alternative to using the handset and onscreen GUI. Configuration via a web browser is also an option

SPECIFICATIONS

DOLBY ATMOS: Yes
DTS:X: Yes (via future firmware update)
MULTICHANNEL INPUT: Yes. 7.1 channel
MULTIROOM: Yes. Zone 2 and 3
AV INPUTS: 4 x composite; 4 x digital audio (2 x optical and 2 x coaxial)
HDMI: 8 x inputs; 3 x outputs (v2.0)
COMPONENT VIDEO: 3 inputs; 2 x outputs
VIDEO UPSCALING: Yes. To 4K
DIMENSIONS: 440(w) x 185(h) x 410(d)mm
WEIGHT: 13.6kg
ALSO FEATURING: Audyssey MultEQ XT32 Pro; ISF video calibration; Apple OS and Android control apps; DLNA networking; Ethernet; Wi-Fi; Bluetooth; USB; AirPlay; FM and internet tuner; Spotify Connect; HDCP 2.2; Hyper Dynamic Amplifier Module design; 4K 50/60Hz passthrough and 4:4:4 sub-sampling; 11.2-channel processing; XLR outputs; Pure Direct mode; Compressed Audio Enhancer; DSD, FLAC, WAV and ALAC hi-res audio support; RS232

HCC VERDICT



Marantz AV8802A

→ £3,350 approx → www.marantz.co.uk
 → Tel: 02890 279830

HIGHS: Sublime natural sound; incredible detail and depth; flexible speaker and format configuration; up-to-date spec
LOWS: No USB-B or Ethernet hub; annoying 75dB setup volume; no silver finish

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

All aboard the Atmos adventure

Mark Craven welcomes the entry-level thinking behind Onkyo's AVR/speaker pack

ONKYO'S HT-S7705 IS an all-in-one solution that features a 5.1.2 Atmos speaker array and an HDCP 2.2-enabled AVR. Its suited to those on a budget with a small-to-mid-size room. It ships in a hulking carton, with the bulk mainly caused by the size of the speakers, rather than the amp.

The two front/height enclosures stand 40cm high, while the centre channel is also quite big compared to the competition.

The AVR is a 7.2-channel model (you can run a normal 'flat' speaker array if you want) with Dolby Atmos decoding prowess and some other key features, including Accu-EQ setup, HDMI 2.0, Wi-Fi and Bluetooth.

Performance-wise, the subwoofer impresses, up to a point. It's front-ported, with an 8in downfiring driver, and certainly not afraid of making its presence felt. During the opening air battle in *Unbroken* the engines of

the bomber planes build from a distant rumble into an omnipotent throaty throb. However, you get a sense that this woofer's output is lacking in nuance and slam.

Flipping between *Unbroken*'s TrueHD mix and its Atmos bitstream reveals noticeable benefits. There's a greater sense of wraparound immersion, with a wall of sound close enough to my face I can lick it.

The overall sound of the speakers is a little bass-heavy, with the tweeters working hard to outmanoeuvre a dominant lower mid-range.



The front L/R speakers also house Dolby Atmos upfiring drivers

High-frequency effects aren't picked out with utmost panache. On the other hand, there's a full-bodied nature to the HT-S7705 that is hard not to enjoy. Movie soundtracks have scale and the system will easily go louder than you need it to.

Overall, this package offers plenty for the price tag ■

HCC VERDICT

Onkyo HT-S7705 → £650 approx

Overall ★★★★★

SAMSUNG HT-J7750W → £800 approx

Everything but the kitchen sink

This tallboy package from Samsung dazzles

Danny Phillips with its multitude of features

LIKE DIET COKE or Quorn, all-in-one home cinema systems aren't as appetizing as the real thing, but most buyers are willing to turn a blind eye to design corner-cutting and flawed sound for the sake of cost and convenience. Yet when it comes to Samsung's premium systems, it's not that simple. You could, at a stretch, assemble a decent separates system for the same price as this one-box effort.

Still, Samsung crams the HT-J7750W full of the latest tricks and features, including Neo:Fusion II processing workings in tandem with swivelling top drivers in the tallboy speakers to deliver a high, expansive soundstage; valve amplifier tech; HDMI switching; 3D/4K passthrough; wireless rear speakers; a wealth of smart content (Netflix,

BBC iPlayer, Blinkbox, Amazon, etc) accessed over the built-in Wi-Fi connection or Ethernet; video and music streaming from networked devices/USB; and Bluetooth hookup/multiroom speaker support.

There's also a bunch of sound modes to play with, mimicking the acoustic properties of music venues across the globe. So if you hanker for the intimate atmosphere of a Jazz Club in Seoul or the echoey grandeur of a Philharmonic Hall in Bratislava, you're in luck.

Sonically the HT-J7750W is an exciting listen, offering an impressive sense of scale and a dynamic, biting tone that stays the right side of brash. You don't have to turn the volume knob very far to coax a room-filling



The HT-J7750W offers tallboy speakers for front and rear channels

sound out of it.

Treble can sound a bit thin at louder volumes, lacking the silky, refined touch you get from better-quality hi-fi speakers – but at least the soundstage is open and spacious. Deep bass from the subwoofer adds depth and authority. Pricey, but worth checking out ■

HCC VERDICT

Samsung HT-J7750W → £800 approx

Overall ★★★★★

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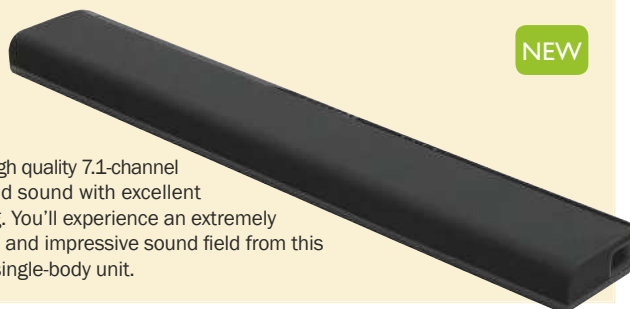
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AV INFO

PRODUCT:
High-end 5.1 array
with dipole/
monopole surrounds

POSITIONING:
Above Gold, there
is only Platinum...

PEERS:
B&W 800 Series;
KEF R Series;
PMC Twenty Series

Precious metals!

Adam Rayner goes digging for home cinema thrills with Monitor Audio's Gold series

MONITOR AUDIO'S NEW Gold series is both big and clever. With voluminous cabinets showcasing ten years of evolution, it continues to uphold the brand's reputation as one of the greats in British loudspeaker manufacturing.

The company makes a wide range of speakers, offering two types of soundbar, skinny speakers to nestle neatly next to your TV, in-wall framed-grille lifestyle speakers and different scale sub/sat packages called Mass, Radius and Apex. Its 'separates' models begin at Bronze, then progress through Silver, Gold and Platinum. The rarer the metal, the better the speaker. The Bronze line sells by the bucket-load, to the point where Monitor Audio produces a step-up series called Monitor

Reference. All in all, twelve different kinds of speakers. Mind you, they are all award-winners. So no pressure on the designers of this set, then...

For me, this very-nearly-the-top-but-not-quite range represents peak value for money, since you get most of the premium engineering that Monitor Audio has devised without having to pay for the privilege of owning the Platinum flagships.

Built for both worlds

One of the clever things about the Gold line is how you can configure and use the speakers either as a hi-fi purist or with the slightly different matter of movie soundtrack

playback in mind. This is evidenced by two signal paths through the W15 subwoofer (one stereo feed, the other an LFE mono input) plus the Movie/Music/Impact/OFF EQ curve positions of its DSP; and the ability to control auto-switching of the surround FX speakers from dipole to monopole use via a 12V trigger, of which more later.

Monitor Audio offers the Gold Series in a dark walnut veneer, lustrous white or black lacquers and a rich Ebony wood piano finish. The latter adds a chunk to the cost (£1,300, in fact). The suggested package price of our black lacquer system is a shade over £7,000.

The stars of the show, visually, are the three-way rear-ported floorstanders, called

Gold 300. The Gold C350 centre speaker isn't exactly small either. Finishing off the array is the massively dense W15 subwoofer and those Gold FX surrounds. The latter have six drivers in them and are designed to be wall-mounted. In monopole use only the front-facing midbass driver and tweeter are employed. Go to dipole mode (either manually via the front switch or via 12V trigger) and the side-mounted drivers come into play (the front tweeter is deactivated in this instance). Dipole will be the weapon of choice for those who like a THX-style diffuse soundfield, particularly when used in a 7.1 setup.

Onto the driver tech. The C-CAM (Ceramic-Coated Aluminium/Magnesium) cones of the mid and bass units in the main speakers are a bonded composite. Ceramic has very

'Monitor Audio's Gold 300AV grasps you by the senses and drags you right into a movie with ease'

low bend or stretch, and when molecularly-bonded to the metal layer that has massive inherent rigidity of its own, it makes a tremendous piston. Hence the drivers' RST (Rigid Surface Technology) branding. That the metal is not just aluminium but is alloyed with the softer but lighter magnesium means it makes a lower moving mass cone assembly.

For this iteration, the cone profile has been tweaked with the central concavities seen on the previous GR and GS models enhanced to the shape of a continuous radiating dish. There's now a longer voice coil working behind the scenes, and a larger motor overall with greater excursion, which MA says has improved driver efficiency and lowered distortion.

I particularly like the C-CAM ribbon tweeter. Such high-frequency drivers are often able to reach so far beyond normal hearing ranges (they're here claimed to reach 60kHz) that the overtones and harmonics that do get into recordings of all kinds are relevant.

Robot wars

For this review, I broke the seal on my Blu-ray of Neill Blomkamp's *CHAPPIE*. I also revisited Dreamworks' *Turbo*. Deeply silly but lovely of soundtrack, like most animations.

In *CHAPPIE*, our protagonist gets involved in stealing cars. He heads out with the gangsters, played by members of Die Antwoord (a rugged Afrikaans-spitting rap act) to go thieving. As the sequence begins, a swell of bassline-infused rap music kicks in. As I'd already been immediately impressed by the clarity and power of the Gold 300AV package, this massive rise in bass weight and overall scale

– and with no hint of any distortion or lack of linearity – caught me by surprise. What I had thought was big and clear up until then turned out to be the MA speakers just on tick over.

The ability to dig out a little incidental sound in the midst of a major crescendo shows the sheer class of this array. *CHAPPIE* tosses his favourite toy, a squeaky rubber chicken, into the road in front of a Nissan Skyline before he car-jacks it – even gesticulating with the chicken as he throws the car owner into the weeds. Both the first and second 'angrier' squeaky-toy noises were portrayed with accuracy and presence, making the sequence as funny as it is meant to be.

MA's leaf tweeters offer enormous detail with no stridency at all. I tried the FX rears in dipole mode, but as that mutes said HF driver I soon found myself switching back to monopole. Even though the gold dome tweeters in the fore-and-aft faces of the FX surrounds are a stalwart of many a Monitor Audio speaker, they are outclassed here. Of course, the good news is that buyers can discover which presentation they like best.

With *Turbo*, I was surprised by how powerfully these surround speakers could play. They can really do it. The movie puts you on a racetrack with cars zooming through your viewing room. The power and speed of the increase in engine noises was astonishing. As each Indy car comes from behind and out through the front, some on the left, then some on the right, the sound through the Gold system was almost a physical blow and terrifyingly realistic. And yet in the snail's tomato patch elsewhere in the movie, it was all about delicacy and detail at tiny background levels.

The three-way Gold C350 centre speaker does a truly full-scale job, and presents dialogue in its stride. Gunfire, shouting and breaking glass during *CHAPPIE*'s Johannesburg riot scene are rendered perfectly with no congestion. Impressive.

That film's soundtrack is filled with massive low-end drops. Monitor Audio only offers 'real' specifications, and says its subwoofer bottoms out at 18Hz. The box is sealed, the Class D power plant is rated at 650W RMS/1,200W peak and the 15in driver's suspension is very wobbly. I'd imagine it reaches single figures in Hz and with tight DSP EQ control, it feels as if there is no limit in depth. It easily pressurised my entire room.

Any which way you look at it...

So, the Gold 300AV array costs plenty but offers enormity. It has might and it has clarity. It can play sweet and linear at low levels or it can frighten the neighbours' neighbours. The sound is immediately engaging, grasping you by the senses and dragging you into a movie with ease. With the Gold 300AV you get delicious performance in every direction. You could pay more and get less. Best buy, easy ■

SPECIFICATIONS

GOLD 300

DRIVE UNITS: 1 x C-CAM (Ceramic-Coated Aluminium/Magnesium) ribbon tweeter; 1 x 4in C-CAM mid-range driver; 2 x 6.5in C-CAM bass drivers

ENCLOSURE: Three-way, rear-ported
FREQUENCY RESPONSE: 30Hz-60kHz
SENSITIVITY: 90dB

POWER HANDLING: 200W
DIMENSIONS: 317(w) x 1,105(h) x 370(d)mm
WEIGHT: 27.2kg

GOLD C350

DRIVE UNITS: 1 x C-CAM ribbon tweeter; 1 x 4in C-CAM mid-range driver, 2 x 6.5in C-CAM bass drivers

ENCLOSURE: Three-way, sealed
FREQUENCY RESPONSE: 40Hz-60kHz
SENSITIVITY: 89dB

POWER HANDLING: 200W
DIMENSIONS: 581(w) x 254(h) x 360(d)mm
WEIGHT: 9.9kg

GOLD FX

DRIVE UNITS: 1 x C-CAM ribbon tweeter; 1 x 6.5in C-CAM bass driver, 2 x 1in C-CAM dome tweeters; 2 x 4in C-CAM mid-range drivers

ENCLOSURE: Two-way, sealed. Dipole or monopole
FREQUENCY RESPONSE: 60Hz-60kHz
SENSITIVITY: 87dB

POWER HANDLING: 100W
DIMENSIONS: 390(w) x 310(h) x 168(d)mm
WEIGHT: 11.9kg

GOLD W15 (SUBWOOFER)

DRIVE UNITS: 1 x 15in C-CAM rigid piston woofer

ENCLOSURE: Sealed
FREQUENCY RESPONSE: 18Hz-40Hz/120Hz (according to setting)

ON BOARD POWER: 650W RMS, Class D amplifier controlled by D2 Audio DSP section
REMOTE CONTROL: Yes

DIMENSIONS: 400(w) x 430(h) x 400(d)mm
WEIGHT: 33.5kg
CONNECTIONS: Phono stereo input/output; LFE input/output; USB socket for firmware

HCC VERDICT

Monitor Audio Gold 300AV

→ £7,150 approx → www.monitoraudio.co.uk
→ Tel: 01268 740 580

HIGHS: Astonishing whole-system bandwidth from infrasonic to 'bat'; muscular sound; flexible setup; premium design and finish

LOWS: Costly; one of the best sub-bass DSPs around has a primitive display...

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

The art of transmission

Mark Craven luxuriates in the clear, crisp waters of PMC's Twenty Series speakers



TAKING THE FRONT left and right positions in the 5.1 system reviewed here is PMC's Twenty.26 floorstander – the flagship model in the Twenty Series. And, as the rest of the speakers feature similar technical and design attributes, it's a good place to start.

A three-way speaker, the Twenty.26 employs a 1in tweeter, 2in midrange and 7in bass driver and PMC's traditional Advanced Transmission Line (ATL) system. In layman's terms, this means it's a ported speaker, only the port is a long internal tunnel (3.3m in this instance), damped with specifically-engineered absorbent material. Claimed benefits include a greater bass extension and a consistent response regardless of listening level.

On surround duties are the Twenty.23s. Again, they use the ATL system, as does the Twenty.C centre channel speaker. The Twenty.Sub stands vertically and packs two drivers. Powering it is a proprietary 400W Class D amp.

Sonic fettling comes from onboard DSP and parametric EQ.

The stand-out impression of the Twenty Series in full-flight is that it is supremely musical, for want of a better word. There's a wonderful smoothness to its performance, from its low-end poise to the

higher frequencies. Nothing is overblown, and there's simply no hint of unwanted resonance or distortion. The nuances and subtleties of recordings are presented in all their glory.

When Quaid visits Rekall Inc (*Total Recall*, 2012, Blu-ray) and finds himself in a shoot-out, the speakers placed me right there in the gloomy room, cowering. The details in the DTS-HD MA mix, such as falling bullet shells or the sound of a rope being untied, were clean and distinct, with the PMCs countering a slight lack of attack and overt subwoofer slam with a healthy dose of naturalness and fleet-footed delivery. This array purrs like a well-oiled engine.

The two-way surround speakers, voiced to match the rest of the range, have presence enough to ensure panning effects and rear details don't peter out. And throughout the soundfield, there's a sense of the audio being dislocated from the speakers themselves.

The centre channel is a stonker. The most sensitive (90dB) of the system, it locks horns with the flanking speakers on the LCR stage to build an appreciable wall of sound, and presents the dialogue channel with real projection and panache. This element of the *Total Recall* mix is very well-recorded, and it shows here. Conversely, the centre speaker is very revealing of some of the ADR work during *Skyfall*'s opening sequence.

The sound of space

Cerebral sci-fi *Interstellar* showcases this 5.1 package at its very best. Its soundmix seems tailor-made for these speakers' strengths, with the sequence where McConaughey and Damon go for a stomp across the lunar landscape, and then have a fist-fight, proving rather emotional. The swirling winds whip around the soundfield with ice-cold precision, while the Twenty.C continues to enunciate dialogue with absolute believability. Meanwhile, Hans Zimmer's organ-infused score raises goosebumps as it swells to a crescendo, the instrumentation sounding startlingly real. The way these speakers bring clarity and body to those crucial mid-range frequencies is astonishing. The result is total immersion in the onscreen image – which is what home cinema audio is all about. Audition if you like the finer things in life ■

SPECIFICATIONS

TWENTY.26

DRIVE UNITS: 1 x 7in bass driver; 1 x 2in midrange; 1 x 1in SONOLEX soft dome tweeter
ENCLOSURE: Transmission line
FREQUENCY RESPONSE: 28Hz-27kHz
SENSITIVITY: 86dB
POWER HANDLING: 300W
DIMENSIONS: 190(w) x 1,062(h) x 439(d)mm
WEIGHT: 22.5kg

TWENTY.23

DRIVE UNITS: 1 x 5.5in mid/bass driver; 1 x 1in SONOLEX soft dome tweeter
ENCLOSURE: Transmission line
FREQUENCY RESPONSE: 29Hz-25kHz
SENSITIVITY: 87dB **POWER HANDLING:** 150W
DIMENSIONS: 152(w) x 918(h) x 330(d)mm
WEIGHT: 13.2kg

TWENTY.C

DRIVE UNITS: 2 x 5.5in mid/bass drivers; 1 x 1in SONOLEX soft dome tweeter
ENCLOSURE: Transmission line/ported
FREQUENCY RESPONSE: 45Hz-25kHz
SENSITIVITY: 90dB
POWER HANDLING: 200W
DIMENSIONS: 520(w) x 172(h) x 305(d)mm
WEIGHT: 9.5kg

TWENTY.SUB (SUBWOOFER)

DRIVE UNITS: 2 x 7in bass drivers
ENCLOSURE: Sealed
FREQUENCY RESPONSE: 22Hz-200Hz
ON BOARD POWER: 400W **REMOTE:** No
DIMENSIONS: 200(w) x 577(h) x 516(d)mm
WEIGHT: 23kg
CONNECTIONS: Balanced XLR stereo input/output; AES XLR input/output

AV INFO

PRODUCT: Premium 5.1 speaker package

POSITIONING: PMC's only range with matching sub and centre channel

PEERS: DALI Epicon; Monitor Audio Gold

HCC VERDICT

PMC Twenty Series 5.1

→ £12,500 approx → pmc-speakers.com

→ Tel: 0870 444 1044

HIGHS: Smooth, even-handed and clear delivery; slender form factor; great for music; excellent centre speaker

LOWS: Not the most stylish cabinets around; subwoofer more fluid than frightening; premium price tag

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

The kings of compact

Danny Phillips falls in love with Q Acoustics' newest bargain-priced 5.1 speaker package



SOME SPEAKER BRANDS start by creating expensive high-end models and then work their way down, but Q Acoustics ploughs its resources into the affordable end of the market. This approach has proved successful, with models offering great design and performance for the money. The £700 5.1 package on test here is the successor to the 2000i Cinema Package that we raved about back in 2012. For this follow up, Q Acoustics has gone back to the drawing board.

The cabinet construction borrows elements from the company's Concept series, providing a solid foundation for new tweeters and improved midrange drivers. The result is a range of burly boxes that feel more substantial than their meagre price tags suggest.

All come in a choice of Matte Graphite and American Walnut (pictured) as standard, but for an extra £200 you can step up to premium lacquered gloss black/white or leather finishes. Q Acoustics also sells optional stands and wall brackets to suit your installation.

I found setup easier than with the 2000i system. The cable terminals have been moved from the underside to the back, which makes them less fiddly to connect – although they point in different directions, which is still a bit awkward with stiff cables.

Old faithful

Like previous Q Acoustics packages, the 3000 system's character is one of refinement and

transparency, giving you a faithful facsimile of any soundtrack. It goes about its business with ease and composure no matter where the volume dial's pointing.

During *X-Men: Days of Future Past* (Blu-ray) the system kept my disbelief firmly suspended as it plunged me into the period-jumping plot. I've never been caught in a battle between mutants and 20-foot-tall robots, but I'm certain this system has it pretty much spot-on.

Its forte is detail. The enhanced tweeters are the most articulate and insightful Q Acoustics has created, and their wide dispersion means you don't have to sit dead centre, or toe in the fronts, to experience them. They tease out subtleties that you normally have to spend a lot more than £700 to hear, and there's never any suggestion of brashness.

When the Sentinels track down the X-Men at the start of the movie, the soundstage sparkles with hissing fire, tinkling ice and crackling electricity as Blink opens a portal. And this isn't just a wall of sound, there's real light and shade amid the carnage. Dialogue is laced with texture too – the seductive husk and sibilance in Patrick Stewart's unmistakable voice grounds it in reality and keeps you absorbed.

Thankfully all this refinement doesn't come at the expense of entertainment. The system's superb dynamics bring effortless excitement and drama. It bites harder than Luis Suarez, making gunshots snap and explosions hit hard. Even the iconic 20th Century Fox theme gets the adrenalin flowing with its piercing snare rolls and incisive brass stabs.

There's excellent scale, too. My room was filled with big bangs and crashes, as well as deep, meaty bass – the dual-driver subwoofer

SPECIFICATIONS

Q ACOUSTICS 3010

DRIVE UNITS: 4in Aramid fibre/paper mid/bass driver; 1in Concentric Ring Dome tweeter
ENCLOSURE: 2-way reflex
FREQUENCY RESPONSE: 68Hz-22kHz
SENSITIVITY: 86dB
POWER HANDLING: 75W
DIMENSIONS: 150(w) x 235(h) x 200(d)mm
WEIGHT: 3.6kg

Q ACOUSTICS 3090C

DRIVE UNITS: 2 x 4in Aramid fibre/paper mid/bass drivers; 1in Concentric Ring Dome tweeter
ENCLOSURE: 2-way reflex
FREQUENCY RESPONSE: 75Hz-22kHz
SENSITIVITY: 89dB
POWER HANDLING: 100W
DIMENSIONS: 430(w) x 150(h) x 200(d)mm
WEIGHT: 6kg

Q ACOUSTICS 3070S (SUBWOOFER)

DRIVE UNITS: 2 x 6.5in bass drivers
ENCLOSURE: Ported
LOW FREQUENCY RESPONSE: 50Hz-150Hz
ON BOARD POWER: 140W
REMOTE CONTROL: No
DIMENSIONS: 200(w) x 400(h) x 425(d)mm
WEIGHT: 13.6kg
CONNECTIONS: Stereo line-level input

HCC VERDICT

Q Acoustics 3000 5.1

→ £700 approx → www.qacoustics.co.uk

→ Tel: 01279 501111

HIGHS: Outstanding detail, dynamics and scale; natural, transparent sound makes any source material shine; solid build and nice design
LOWS: Subwoofer might not satisfy hardcore bassheads in terms of depth; slightly awkward speaker terminals; glossy finishes cost more

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

AV INFO

PRODUCT:
Compact
5.1-channel package

POSITIONING:
Successor to the
2000i Cinema Pack

PEERS:
Wharfedale
Diamond 220 HCP;
Mission M3

offers impressive agility, punch and watertight integration for the price.

Try though I might, I really can't fault this new 3000 package. The revamped cabinets and drivers bring improvements over the 2000i, resulting in a sweeter, punchier and more articulate performance than its esteemed predecessor. An absolute steal ■

Diamonds are forever

Danny Phillips auditions the new jewels in Wharfedale's standmount speaker crown



THE 220 HCP is a Wharfedale Diamond 200 series 'starter pack' featuring two pairs of the 220 standmounts – the larger of two standmount models in the range – plus the 220C centre speaker and SPC-10 active subwoofer. Bought individually these speakers would cost £900, but the package price nets you a £50 saving.

The Diamond 220 HCP costs £100 less than its 2013 100 HCP predecessor, and offers an improved design. The system comes in white, walnut and rosewood finishes as well as black, with a new lacquered baffle adding a touch of class missing from the Diamond 121's plasticky fascia. They're still a bit boxy, though.

For drivers, the 220s use 5in woven Kevlar cones with semi-elliptical 'break-up' areas on the surface, and 1in soft-dome tweeters – identical to the 100 series. Wharfedale also keeps faith with the front-facing Slot-Loaded Distributed Port system introduced on this range's predecessor. The manufacturer says this has been refined with added airflow control at the port exit to minimise turbulence and distortion.

It also means you're less restricted when placing them, as they can be situated nearer to a rear wall than conventional rear-ported speakers. It can't be easy improving performance while knocking £100 off the price tag but

somehow Wharfedale has managed it with this array. The 220 HCP delivers an assured and articulate performance for the money.

Its stand-out attribute is detail. When Smaug attacks Lake Town at the start of *The Hobbit: The Battle of the Five Armies*, the scene sparkles with nuance and texture. Blasts of dragon fire have an effervescent top-end crackle and smashed-up wooden buildings splinter and snap like they do in real life. Quieter moments on the shores of Lake Town are teeming with chattering voices, crunchy footsteps and lapping water. Not only is this absorbing but it also makes the soundstage airy and spacious, which intensifies the drama when Smaug swoops between speakers.

The sound is also surprisingly refined. The 220s don't get overly aggressive or shouty to convey excitement – the tone is smooth and easy, with a natural crispness in the highs and forthright midrange providing all the dynamism you need. The system doesn't have any trouble conveying scale either, belting out Peter Jackson's battles with gusto. Footsteps thump in unison as armies of orcs, dwarves and elves pour into every inch of the screen, while an exhilarating tapestry of combat effects come at you from every direction.

And when trolls and earth-eaters enter the battle, the SPC-10 sub steps in and boosts the soundstage with explosive bass. Aptly, I felt dwarfed by the size and loudness of it all.

Keeping faith with this sub (also used in the 100 HCP array) was a good move – its low frequencies integrate tightly with the Slot-Loaded bass from the 220s, ensuring a unified, non-directional sound.

SPECIFICATIONS

DIAMOND 220

DRIVE UNITS: 5in woven Kevlar bass driver; 1in soft-dome tweeter
ENCLOSURE: Slot-Loaded Distributed Port
FREQUENCY RESPONSE: 56Hz-20kHz
SENSITIVITY: 86dB
POWER HANDLING: 25-100W
DIMENSIONS: 174(w) x 315(h) x 227(d)mm
WEIGHT: 5.3kg

DIAMOND 220C

DRIVE UNITS: 2 x 5in woven Kevlar bass drivers; 1in soft-dome tweeter
ENCLOSURE: Slot-Loaded Distributed Port
FREQUENCY RESPONSE: 60Hz-20kHz
SENSITIVITY: 89dB
POWER HANDLING: 25-150W
DIMENSIONS: 470(w) x 190(h) x 236(d)mm
WEIGHT: 8.5kg

SPC-10 POWERCUBE (SUBWOOFER)

DRIVE UNITS: 10in long-throw cone driver
ENCLOSURE: Sealed
FREQUENCY RESPONSE: 35Hz-120Hz
ON BOARD POWER: 215W
REMOTE CONTROL: No
DIMENSIONS: 352(w) x 382(h) x 305(d)mm
WEIGHT: 11.4kg
CONNECTIONS: Stereo line in; LFE line in; stereo speaker-level input

HCC VERDICT

Wharfedale Diamond 220 HCP

→ £850 approx → www.wharfedale.co.uk

→ Tel: 01480 452561

HIGHS: Extremely detailed and insightful sound; huge scale and bass weight; excellent integration; unfussy about placement; much improved looks and build

LOWS: Safe, boxy cabinets; rivals are cheaper

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

It's hard to fault the Diamond 220 HCP at this price. The only thing Wharfedale is battling against is the quality of the competition – systems like Q Acoustics' 3000 undercut it in price (by around £150 depending on finish) and, in my experience, deliver even greater refinement – and its slightly unadventurous styling. This doesn't make it any less worthy of your consideration ■

AV INFO

PRODUCT: 5.1-channel speaker package

POSITIONING: Replaces Diamond 100 HCP

PEERS: Q Acoustics 3000; Mission M3; SVS Prime 5.1

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Prime entertainment

Something of a departure from the kings of cubic capacity, the SVS Prime Satellites still make a big impression on **Ed Selley**



THE PRIME IS a complete range of speakers from SVS including floorstanders, centre speakers and standmounts, but these – the Prime Satellite – are the smallest member of the family. It's a compact, two-way bookshelf speaker that SVS will supply as a quintet with its SB1000 subwoofer to make the Prime 5.1 system. The speaker stands a whisker over 22cm tall. Into this fairly tight space, SVS has squeezed a 1in aluminium tweeter and a 4.5in polypropylene midbass driver. It's also rear-ported the cabinet. This means that for a fairly small box, the Prime manages to offer a claimed roll off of 69Hz, which allows the Satellite to run a crossover that takes it most of the way to the use of the subwoofer being genuinely omnidirectional.

The SB1000 sub has been reviewed individually before (*HCC* #222). It is the smallest of the SVS models and is available separately for around £450. Unlike the Satellite, 'small' does need to be used carefully here, as the SB1000 features a 12in driver motivated by a Sledge DSP 300W amplifier. This is encased in a neat-looking cubed cabinet that is only marginally wider than the driver.

The fit and finish of the system is good. Our review set is dressed in gloss black, which looks much smarter than the black ash option,

but raises the price. Opt for ash and this set comes in at £850 – a good potential saving if you'd rather spend your money on Blu-rays.

Big ideas

In terms of sonic performance, the SVS array stops being small the moment that you put some audio through it. The decision by SVS to squeeze a 4.5in driver into the Satellite, and the corresponding boost to the low-frequency response, means that each speaker is able to generate serious heft in its own right. When you throw in a subwoofer that is able to produce meaningful output from 20Hz and up, you have a system that manages to create a real sense of scale.

It is also extremely entertaining. Colin Firth's stylised demolition of the church toward the end of *Kingsman: The Secret Service* (Blu-ray) is tremendously powerful and well handled by this sub/sat setup. The sense of there being multiple fights taking place all around you is captured impressively, and the speakers manage to extract a significant amount of fine detail from the mix.

Using a matching enclosure for the centre pays off comparatively well. While there is a sense that dialogue might be fractionally clearer on a dedicated centre speaker, the trade-off is that across the front soundstage the movement from channel to channel is fluid. Being hyper-critical, I'd say that each speaker has a narrow presentation that tends to beam information at you, but this is no more pronounced than most satellites and it reflects well that I began subconsciously considering the Prime to be a full-size model.

SPECIFICATIONS

PRIME SATELLITE

DRIVE UNITS: 1 x 1in aluminium tweeter, 1 x 4.5in polypropylene midbass driver
ENCLOSURE: Ported
FREQUENCY RESPONSE: 69Hz-25kHz
SENSITIVITY: 85dB
POWER HANDLING: 150W
DIMENSIONS: 124(w) x 223(h) x 152(d)mm
WEIGHT: 2.94kg

SB1000 (SUBWOOFER)

DRIVE UNITS: 1 x 12in long-throw woofer
ENCLOSURE: Sealed
FREQUENCY RESPONSE: 24Hz-260Hz
ON BOARD POWER: 300W
REMOTE CONTROL: No
DIMENSIONS: 344(w) x 344(h) x 370(d)mm
WEIGHT: 15.42kg
CONNECTIONS: Stereo in/out; LFE in/out; high-level in

HCC VERDICT

SVS Prime 5.1

→ £1,000 approx → www.karma-av.co.uk
 → Tel: 01423 358846

HIGHS: Powerful, cohesive and refined sound; excellent build quality; subwoofer is compact considering driver size

LOWS: Slightly directional in delivery; more conspicuous in size and design than some rivals

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Presentation is also tonally spot on. The climatic drum sequence in *Whiplash* (Blu-ray) sounds absolutely right. There is a real sense of the tremendous energy that the drumkit is releasing and thanks to the hefty output of the SB1000, this energy is felt as much as it is heard. Up at the top-end, cymbals sizzle with metallic energy and realism while remaining impressively civilised for the most part.

This civility also makes the Prime 5.1 a happy partner for day-to-day TV viewing and the performance in 2.1 mode is also creditably musical, with a sound that doesn't favour one element of the frequency range paying dividends. And, just as importantly for a domestic speaker package, they still sound clear and detailed at lower listening levels ■

AV INFO

PRODUCT:
5.1 sub/sat system

POSITIONING:
Entry-level models in the SVS Prime speaker range

PEERS:
DALI Zensor Pico 5.1;
Wharfedale
Diamond 220 HCP



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Worthy of a podium finish

Danny Phillips goes hunting for audio thrills with Monitor Audio's well-priced 5.1 package



THIS 5.1 PACK is assembled from Monitor Audio's new Bronze Series, and includes a pair of Bronze 5 floorstanders, which use two midbass drivers compared with the three found on the bigger Bronze 6. They're joined by the Centre, a pair of Bronze FX dipole/bipoles and the W10 subwoofer.

All speakers come in a choice of Black Oak, Walnut, Rosemah and White Ash finishes. Here you'll find a concession to the system's entry-level status – the vinyl veneer is much less impressive than the sumptuous lacquers adorning more expensive speakers.

For the price tag demanded, this sextet of cabinets proves rather spectacular. With *Snow White and the Huntsman*, they impress right from the off. Chris Hemsworth's opening

narration has fabulous depth and presence through the Bronze Centre, with a gruff, grainy texture and nuances making it utterly realistic.

The tweeters used across the system claim a response up to 30kHz. In practice, this means none of the movie's top-end detail goes awry. The

quiet that precedes Snow White's encounter with the troll is bristling with subtle ticks like trickling water and rustling leaves. The clarity is entrancing. There's an organic feel to these details that not every speaker system can achieve, but appears to be second nature here. Treble effects are voiced with no hardness or straining even when driven at high volumes.

Presentation is poised and organised even in the face of a sonic onslaught. When the troll starts smashing up scenery, the MA set makes sense of every effect no matter how small, from splintering wood to splashing water. This lucid, natural approach lets you lose yourself in the story without even realising there are speakers in the room. That's the measure of a great system.

The subwoofer is a powerhouse too, helping the array make a massive impact.

Occasionally I yearned for a little more edge to the soundfield, just to lift excitement levels even further. The smooth character and ability to remain calm is a virtue in most cases – and pays dividends when playing music – but if you like a little more grit there are more forceful, forward-sounding systems out there.

On the whole, though, this is a tremendous entry-level offering, backing up its rousing, insightful sound with top-drawer design and build quality. It looks and sounds like it should cost a lot more than it does ■

SPECIFICATIONS

BRONZE 5

DRIVE UNITS: 1 x 5.5in C-CAM bass driver; 1 x 5.5in C-CAM mid-bass driver; 1 x in gold dome C-CAM tweeter
ENCLOSURE: Dual-chamber bass reflex with front and rear HiVe II ports
FREQUENCY RESPONSE: 37Hz-30kHz
SENSITIVITY: 90dB
POWER HANDLING: 120W
DIMENSIONS: 850(h) x 165(w) x 248(d)mm
WEIGHT: 11kg

BRONZE CENTRE

DRIVE UNITS: 2 x 5.5in C-CAM mid-bass drivers; 1 x 1in gold dome C-CAM tweeter
ENCLOSURE: Sealed
FREQUENCY RESPONSE: 60Hz-30kHz
SENSITIVITY: Not given
POWER HANDLING: 120W
DIMENSIONS: 165(w) x 460(h) x 165(d)mm
WEIGHT: 5.6kg

BRONZE FX

DRIVE UNITS: 1 x 5.5in C-CAM mid-bass driver; 2 x 1in gold dome C-CAM tweeters
ENCLOSURE: Sealed
FREQUENCY RESPONSE: 65Hz-30kHz
SENSITIVITY: 88dB
POWER HANDLING: 80W
DIMENSIONS: 274(w) x 276(h) x 105(d)mm
WEIGHT: 3.2kg

W10 (SUBWOOFER)

DRIVE UNITS: 1 x 10in long-throw bass driver; 1 x 10in flat panel ABR
ENCLOSURE: Bass reflex
FREQUENCY RESPONSE: 30Hz-120Hz
ON BOARD POWER: 220W
REMOTE CONTROL: No
DIMENSIONS: 320(w) x 320(h) x 330(d)mm
WEIGHT: 12.9kg
CONNECTIONS: LFE input; stereo line input

HCC VERDICT

Monitor Audio Bronze B5 AV

→ £1,500 approx → www.monitoraudio.co.uk
 → Tel: 01268 740580

HIGHS: Robust build quality; elegant design; muscular bass; immersive soundstage; impressive detail and insight

LOWS: Could be more attacking and forward-sounding; vinyl veneer finish with no lacquer option

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

AV INFO

PRODUCT:
5.1-channel
speaker package

POSITIONING:
Entry-level range,
below Platinum,
Gold and Silver

PEERS:
B&W 683 Theatre;
Acoustic Energy
1-Series

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Refining the art of Blu-ray

This is possibly the finest HD disc player in the world right now, says a love-struck **Steve May**



MUCH LIKE THOR'S Uru hammer, only the home cinema worthy will be able to lift Pioneer's BDP-LX88 Blu-ray player. Tipping the scales at an enormous 13.4kg, it boasts more armour than Brad Pitt's tank, and is heavier than many AV receivers. This is good news. In a world of disc-spinning flotsam, the likes of the BDP-LX88 are rare, wonderful things.

But there's much more to Pioneer's new flagship player than bulk. This deck delivers every possible playback refinement, cherishing legacy standards (your DVD-Audio and SACD discs are welcome here) and welcoming new ones (4K upscaling to 2,160p is a given).

Indeed, everything about the BDP-LX88 is impressive. Over-engineered and blessed with a wealth of advanced processing, it's capable of first-rate AV alchemy.

As befits its upmarket profile, there's an intriguing smorgasbord of connectivity, including dual HDMI outputs, coaxial and optical digital audio outputs, and both balanced and unbalanced analogue audio outputs. There's no Wi-Fi, but you obviously get Ethernet plus front and rear USB ports.

The Main/Sub HDMI outs can be configured in several ways. Users can mimic the output from both, in order to drive both a panel and a PJ. Alternatively, you can separate sound from vision, one output feeding a display while the other delivers audio only to an AVR.

There's also a Pure Audio mode, where the only output is audio via the Sub HDMI.

The chassis itself has black box-like integrity. A multi-layer design sees the 1.6mm base reinforced with a 3mm-thick plate to ensure absolute rigidity. The chances of any external vibration making it through would seem negligible. Steel frames shore up the innards and sides. Just for good measure, a 1mm-thick steel plate tops things off.

The remote is an ugly button-fest, wilfully ignoring recent trends toward simplicity. You'll (eventually) know how to use it, but no one you hand it to will. Disc loading times aren't great either. A simple Java-lite concert disc takes a slow 40 seconds to get from open tray to onscreen menu.

Images are sumptuous and picture tech formidable. Pioneer's Precise Pixel driver features detail enhancement and noise reduction, which conspire to extract as much genuine detail from sources as possible. Irritations such as Gaussian, block and mosquito noise are all subjected to clean-up. The result is evidenced with certain BDs – it's enough to tempt me to watch *Transformers: AoE* again – and really becomes noticeable on DVDs. Canny texture enhancement is used alongside edge processing to bring out subtle levels of depth. You can influence this using the Super Resolution tool in the Video Adjust menu.

Where the player falls obviously short is in the non-provision of network streaming services. BBC iPlayer and Netflix are absent – we're grudgingly offered just YouTube and Picasa clients. At least you can stream video and audio content from networked storage.

Musical performance impresses too. Left and right channels are served by an ESS

SPECIFICATIONS

3D: Yes
UPSCALING: Yes. To 2,160p (60fps)
MULTIREGION: No. Region B BD/R2 DVD
HDMI: Yes. 2 x HDMI v2.0
COMPONENT: No
MULTICHANNEL ANALOGUE: No
DIGITAL AUDIO OUTPUT: Yes. 1 x optical; 1 x coaxial digital
ETHERNET: Yes
BUILT IN WI-FI: No
SACD/DVD-A: Yes/Yes
DOLBY TRUEHD/DTS-HD DECODING: Yes/Yes
DOLBY TRUEHD/DTS-HD BITSTREAM: Yes/Yes
DIMENSIONS: 435(w) x 130(h) x 339(d)mm
WEIGHT: 13.4kg
FEATURES: Balanced and unbalanced stereo analogue outputs; 2 x USB inputs; app control; a multitude of picture processing modes; RS-232 control; YouTube and Picasa apps; DLNA media playback: AAC, AIFF, ALAC, DSD, FLAC, MP3, APE, WAV and WMA for audio, AVI, FLV, MKV, MPEG4, MPG, and WMV for video; PQLS over HDMI; triple-layer chassis design

HCC VERDICT



Pioneer BDP-LX88

→ £1,200 approx → www.pioneer.co.uk
 → Tel: 0208 836 3501

HIGHS: Supreme build quality; excellent video performance; uncanny musicality; powerful signal processing options

LOWS: Will be overly complex for many; token streaming services; prone to hanging when navigating networked sources; slow disc loading

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

AV INFO

PRODUCT:
Flagship universal Blu-ray player

POSITIONING:
Tops Pioneer's player range, sitting above the BDP-LX58

PEERS:
Oppo BDP-105D;
Arcam UDP411

Sabre Reference DAC, and spatial imaging is pronounced. Bowie's *Soul Love*, from the SACD of *Ziggy Stardust*, proves a mesmerising listen, the kind that stays with you for days. It's audiophile-grade stuff, and just another reason to point anyone interested in a high-end spinner in the direction of the BDP-LX88 immediately ■

Budget Blu-ray beguiles

This mature-looking player majors on media playback and 4K scaling, says **Danny Phillips**



4K UPSCALING ON Blu-ray players is a tricky issue. If you own a 4K TV with its own built-in upscaling, then there's little point having it on your Blu-ray player – unless, of course, the deck's upscaling engine is superior to that of the TV. This certainly isn't guaranteed from a £100 player.

Whatever your feelings on the issue, the DMP-BDT370 offers it, so this could be a no-brainer if you prefer to upscale at source. The player also allows you to playback hi-res photos in 4K resolution on your TV.

Panasonic's deck bucks the trend for compact design with a chassis that measures 430mm wide, making it a better match for an AV receiver than rival budget decks. Anyone familiar with last year's DMP-BDT360 will know what to expect aesthetically – all-black bodywork (also available in silver) with elegant, curved corners and a fascia hidden behind a drop-down flap. A front-panel display imparts its operational wisdom in large, bright digits, while the pair of USB ports next door let you play media from storage sticks. Panasonic sometimes includes an SD card slot on its players. Not here, though.

On the back you'll find the usual budget trio – HDMI, optical digital audio and Ethernet. Built-in Wi-Fi facilitates Miracast screen mirroring, DLNA file streaming and access to a decent range of internet apps. The main services are here – BBC iPlayer, Netflix, Amazon Instant Video, YouTube, Facebook and Twitter – but there's nothing that sets it apart from the crowd like ITV Player, 4OD, Now TV or Spotify.

It doesn't help that the apps are presented in the same cumbersome menu Panasonic has been using for yonks. The apps are spread across several menu pages and the cursor is slow to respond, making the whole online experience feel laboured.

Yet the home screen is still among the most intuitive I've encountered. The option tiles are arranged in a cross, and one press of the relevant key on the direction pad takes you to the next screen. Presentation becomes more basic once you start diving into DLNA menus, but it's always logical and responsive.

The DMP-BDT370 loads discs quickly, taking 16 seconds to play *Godzilla* and 30 to fire up *The Amazing Spider-Man 2*. Once

loaded, the deck turns in a textbook display of hi-def image reproduction, presenting the vibrant, fast-moving superhero shenanigans without putting a pixel out of place. 3D discs look equally stunning.

Colours are bold and nuanced, while the well-judged contrast level keeps the image punchy and detailed even during dark scenes. There's no need to play about with the image adjustments either, as the Normal preset offers the most neutral balance.

I checked out the deck's 4K upscaling on a Samsung UE55HU7500 and although it was subjectively difficult to see any real difference, rest assured that it didn't look any worse. The feature could prove more useful with a budget 4K set, of course. DVD upscaling is accomplished ■

HCC VERDICT

Panasonic DMP-BDT370 → £100 approx

Overall ★★★★★

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Arcam's heavenly creature

Zeus himself might covet Arcam's new BD deck, says **Steve May**, but mere mortals are advised to check it out too



THE ARRIVAL OF a new BD spinner from Arcam is a big deal. Its players tend to be hewn from Mount Olympus itself, and blessed with the ability to emotionally engage even the most mean-spirited of listeners. And while this new, gorgeous deck has a different lineage from what we've seen before – the brand is using the MediaTek platform favoured by Oppo and Cambridge Audio – these key attributes remain in evidence.

The player is nearly, but not quite, universal – there's no DVD-Audio support. It remains compatible with Super Audio CD, though, as well as all the usual BD, DVD and CD iterations. Backside connectivity is solid. You get phono/XLR stereo outputs, HDMI, an Ethernet jack, digital and coaxial audio outputs, USB reader and Wi-Fi antenna. The wireless option didn't work that well for me. It failed to find a signal being pumped out by my Asus wireless router mere metres (and two walls away). It did locate a BT Home Hub that was slightly nearer, though. Given that my media was sitting on

the former not the latter, I had to opt for a wired connection.

The deck's main home screen features rainbow wallpaper and just two buttons: Settings and My Media. The latter throws up networked media sources, connected USB devices or loaded discs. Video file

support covers WMV, AVI, MKV, MPEG and VOB; audio embraces WMA, MP3, FLAC and DSD – with caveats. It refused to play FLAC files from a QNAP NAS, while a rival Oppo on the same network had no such calms. Yet it did play nice with an Imerge music server.

Disc loading speeds are refreshingly fast and image quality is positively divine. The opening sequence to Pixar's *A Bug's Life* (Blu-ray), is a symphony of fine detail and velvety colour gradation. The camera pans into the forest of grass to reveal ants collecting and marching food back to their nest; from the heavily textured gravel to the artfully delineated grass and leaves, everything shines. I don't think I've ever seen this disc look better.

Scrubbing up nicely

With HD sources now almost ubiquitous, some may consider DVD upscaling talents superfluous. Yet excellence in this area can be vital in maintaining the longevity of your disc collection. *War of the Colossal Beast* may be a B-movie classic, but is unavailable on Blu – the upscaling on the UDP411 is good enough to make such a criminal oversight more bearable. When our monochrome heroes rattle across the Mexican desert in a van laced with drugged bread in search of a 60ft man-mountain (as you do), jaggies are nowhere to be seen.

The UDP411 proves a peerless multichannel audio source, too. The insect-strewn DTS-HD MA soundtrack of *A Bug's Life* is consistently enveloping, with indefatigable buzzes and chirps. Similarly, the 5.1 SACD release of Bowie's *Ziggy Stardust* is a sumptuous listening experience, with immaculate image placement

AV INFO

PRODUCT:

Blu-ray player with 4K upscaling and audiophile ambitions

POSITIONING:

Arcam's top-end AV source component

PEERS:

Oppo BDP-105D; Pioneer BDP-LX88

SPECIFICATIONS

3D: Yes
UPSCALING: Yes. To 4K
MULTIREGION: No. Region B BD/R2 DVD
HDMI: Yes. 1 x v1.4 output
COMPONENT: No
MULTICHANNEL ANALOGUE OUTPUTS: No – stereo only
DIGITAL AUDIO: Yes. 1 x optical output; 1 x coaxial digital output
ETHERNET: Yes
BUILT IN WI-FI: Yes
SACD/DVD-A: Yes/No
DOLBY TRUEHD/DTS-HD DECODING: Yes/Yes
DOLBY TRUEHD/DTS-HD BITSTREAM: Yes/Yes
DIMENSIONS: 433(w) x 100(h) x 400(d)mm
WEIGHT: 6.2kg
FEATURES: Balanced stereo XLR outputs; TI/Burr Brown PCM1794 DAC; USB input; media file playback over DLNA and USB (WMV, AVI, MKV, MPEG, VOB, WMA, MP3, FLAC and DSD); RS232/IP/IR system control; Apple iOS app controller; selectable output resolution

HCC VERDICT

Arcam FMJ UDP411

→ £1,200 approx → www.arcam.co.uk

→ Tel: 01223 203200

HIGHS: Superb HD video performance; excellent multichannel performance; audiophile stereo; brilliant build quality

LOWS: No DVD-Audio support; no internet content services; can be picky when streaming from a NAS

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

and three-dimensional instrumentation. For two-channel sources, my preference is for the Arcam's analogue outputs, although stereo over HDMI (which supports up to 24-bit/192kHz) is entirely acceptable. Beneath the lid a TI/Burr Brown PCM1794 DAC offers a pristine two-channel performance, aided by sub-regulated power supplies for the drive, audio and DAC boards.

This deck faces strong competition from other high-end players, and its DVD-A omission and NAS hiccups are a slight irritant, but the Arcam faithful are unlikely to be concerned ■

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Laser eye surgery!

Epson's 4K laser projector is a home cinema revelation, insists **Steve May**



SPECIFICATIONS

3D: Yes. Active shutter
4K: Not native, but 3,840 x 2,160 via enhanced picture presentation
CONNECTIONS: 2 x HDMI (v1.4); Ethernet; component and composite video inputs; PC D-sub; RS232; 2 x 12V triggers
BRIGHTNESS (CLAIMED): 1,500 Lumens
CONTRAST (CLAIMED): 'Absolute black'
DIMENSIONS: 550(w) x 225(h) x 553(d)mm
WEIGHT: 18kg
FEATURES: 4K Enhancement technology; 19dB fan noise (Eco mode); 30,000-hour LED lamp life (Eco mode); Epson Poly-silicon TFT active matrix 0.74in panel Reflective HTPLS; laser diodes; image interpolation; ten memory lens setting; vertical/horizontal lens shift; vertical keystone correction; 2.1x powered zoom; motorized focus; 30-300in image size; 1.28-2.73:1 projection ratio

HCC VERDICT

Epson EH-LS10000

→ £6,000 approx → www.epson.co.uk

→ Tel: 01952 607 111

HIGHS: Lush colour performance; outstanding black level and shadow detail; quiet operation; superb 4K upscaling of Full HD content

LOWS: Large and hefty; not native 4K; HDMI inputs v1.4 not 2.0

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

I CAN SEE clearly now the grain is gone. I can literally see all obstacles in my way. Gone are the dark clouds... replaced by perfect shadow detail and absolute blacks. This is laser home cinema, and it's pretty special.

Of course, we've seen projectors with solid-state light sources before. LED Picos are ten a penny and Viewsonic has touted a laser/LED hybrid, the Pro9000. None come close to the performance offered here, though.

Semiconductor laser diode technology isn't cheap, which goes some way to justifying the premium price tag. The EH-LS10000 employs a blue laser light engine with two light paths. One blue laser diode generates blue light routed through an optical diffuser, while the other uses a phosphor wheel to generate yellow, which is then in turn split into red and green via a dichroic mirror. The result is a three-colour light source compatible with Epson's long-established 3LCD panel technology.

The manufacturer rates the life of this laser power plant at a huge 30,000 hours in Eco mode. There's lens shifting and a 2.1x motorised zoom (plus ten-position lens memory function) to aid installation.

White and colour light output are rated at a modest 1,500 lumens, but any concerns about the brightness of the PJ

are quickly squashed when up and running. Indeed, its pictures are actually watchable in moderate levels of ambient light – good news for sports parties and social gaming shindigs. But it's in a dedicated light-controlled theatre that the EH-LS10000 (literally) shines.

Colour fidelity is outstanding. Reds and blues appear deeply saturated, without the merest hint of noise. There's an old-school Technicolor lushness on display that's sumptuous. Of the various image presets, Cinema proved my go-to mode as it's extremely well judged. Should you feel the need, there's also provision for ISF calibration.

Dynamism is another strong point, with the Epson throwing forth deep blacks and graded shadow detail. The monochromatic stop-motion of *Frankenweenie* (Blu-ray) looks stunning; lighting bolts crack pure white against a pitch-black sky as Sparky is brought back to life. And when Jor-El escapes General Zod amid planet-wide quakes (*Man of Steel*, Sky Movies), explosions glare in the deeply-shadowed caverns.

Such high contrast doesn't come with the traditional scritch noise of dynamic iris adjustment. The EH-LS10000 controls its laser engine rapidly, adjusting the light output between zero and 100 per cent without need of a mechanical iris. It can also shut the laser off completely to achieve absolute black; impossible on a lamp-based beamer.

But what of the '4K enhancement' feature that debuts here? While the PJ supports a native 4K input and outputs a 3,840 x 2,160 resolution image, the panels betwixt are HD

resolution. So at the heart of the projector is a 4K upscaling chipset, used in conjunction with optical chicanery that electronically shifts alternate frames half a pixel across and half a pixel up, effectively doubling the frame rate and the apparent resolution.

The process does a remarkable job. I may have been watching a superhero romp on Sky, but subjectively it could have been coming from a 4K cinema DCP. Viewed in isolation, I doubt many could tell the difference. With 3D, though, resolution is pegged to regular 1080p.

With the EH-LS10000 Epson has reached for a slice of the high-end and grabbed it with ease. It may not be native 4K, but its performance will have your jaw on the floor ■

AV INFO

PRODUCT: Premium-grade home cinema projector

POSITIONING: Epson's flagship, above the TW models

PEERS: Sony VPL-VW320ES; JVC DLA-X700R

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Hours of entertainment

Optoma has rejuvenated its LED-based HD91 projector. **John Archer** lets it light up his life



SPECIFICATIONS

3D: Yes. Active
4K: No. 1,920 x 1,080
CONNECTIONS: 2 x HDMI; D-Sub PC port; component video input; composite video input; 2 x 12V trigger outputs; 3D Sync transmitter port; RS232 control port; USB update port
BRIGHTNESS (CLAIMED): 1,300 Lumens
CONTRAST (CLAIMED): 600,000:1
DIMENSIONS: 345(w) x 161.5(h) x 443(d)mm
WEIGHT: 7kg
FEATURES: DLP LED projection system; 20,000-hour claimed LED life; anamorphic lens support; full colour management; PureEngine video processing; vertical (+/- 60%) and horizontal (+/-10%) image shift; vertical keystone correction; 1.9x optical zoom; 1.5-2.89:1 throw ratio

HCC VERDICT

Optoma HD91+

→ £3,500 approx → www.optoma.co.uk
 → Tel: 01923 691 865

HIGHS: Gorgeously detailed pictures; no need to replace any lamps; excellent in terms of setup flexibility and calibration

LOWS: Dynamic contrast system is clumsy; it's a touch expensive; awkwardly placed image shift wheels

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

THE LAUNCH OF Optoma's original HD91 projector in 2014 was a big deal. It marked the first time ultra long-life DLP LED technology (Optoma reckons the HD91+'s LED light source will last 20,000 hours) had been applied to a home cinema projector that didn't cost as much as a new car. It also gave a good account of itself performance-wise, only being let down by a lack of contrast and brightness.

Optoma has decided to try and fix these issues with the cunningly named HD91+. This model increases brightness by nearly a third to 1,300 lumens and delivers a claimed 600,000:1 contrast ratio.

As well as that fabulously long lifespan, the HD91+'s LED light engine promises superior colour stability versus typical single-chip DLP projectors, and a far lower rate of picture quality reduction over time versus rival lamp-based beamers. Plus LEDs don't require

tedious warm up and warm down times.

The HD91+ is flexible. Its optical zoom runs to a generous 1.9x, while wheels positioned – bizarrely – on the projector's underside cater for horizontal and vertical image shifting. The onscreen menus, meanwhile,

provide in-depth colour and gamma management systems, as well as plenty of control over the PJ's dynamic contrast and effective PureEngine image processing tools, (colour, sharpness and motion).

Picture quality instantly struck me as substantially improved over the original model. Run-throughs of *Oblivion* and the last *Harry Potter...* film looked brighter and with greater contrast, thanks to an obvious increase in light output and a noticeably deeper black level response. These new strengths make the HD91+'s more in line with other projectors in its price range. You no longer feel as if you're paying off some of Optoma's R&D budget.

The lowest-powered Dynamic Black mode proves vital to giving contrast a boost, although it can distract during the most extreme transitions.

Full HD images are detailed and sharp, revealing plenty of subtle information. This detailing even extends to dark scenes like Ron and Hermione's post Horcrux-destroying snog, where the HD91+ produces reference-grade levels of shadow detail. Grain here is still visible, but only in an organic way that never starts to take over the picture.

Contributing to the HD91+'s sharpness is excellent motion handling. There's minimal judder or blur to worry about even if you don't use the motion processing system.

Colours, for the most part, are improved. A little calibration is necessary to remove a

pinkish tone from dark sequences and a slightly green tone to very bright scenes, but you can soon get pictures enjoying a good blend of vibrancy and accuracy.

The HD91+ is good with 3D, too. Equip yourself with Optoma's optional transmitter and active spex and you'll savour cinematic immersion – pictures are detailed, crisp and free of crosstalk. It's not the brightest experience around, but markedly punchier than that of the original HD91.

Often when new kit arrives with a '+' sign tagged onto the end of the name of a previous model it means it only improves slightly on what's gone before. With the HD91+, though, Optoma has delivered a major leap forward. If LED's practical benefits appeal, so will this PJ ■

AV INFO

PRODUCT:
A DLP projector using LED tech

POSITIONING:
At the top of Optoma's home cinema range

PEERS:
JVC DLA-X500;
Sony VPL-HW55ES

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One bar to rule them all

The Yamaha YSP-5600SW is a soundbar/subwoofer duo with serious audio ambitions.

Steve May puts it to the test



YAMAHA'S YSP-5600 IS a significant piece of kit to install. You'll need either wide, solid furniture or a sturdy wall. And there's no fancy aesthetic to this soundbar either. With tapered edges, the YSP is all front-facing mesh, behind which hides a 46-speaker beam array – each mini driver controlled by its own time delay setting and amplifier. Placed at the edge are twelve (2 x 6) 28mm upward-angled height speakers. These drivers utilise the same technique favoured by Dolby Atmos-enabled speakers, bouncing audio off the ceiling to create a height channel. In between are 32 beam drivers used to paint the L/C/R and surround, plus two (sub) woofers. There's a lot of directional acoustics at play here.

The YSP's total claimed power output is 128W. The 'bar offers four HDMI inputs (one 4K/HDCP 2.2-capable) and one HDMI out. Wi-Fi and Bluetooth are integrated, and there's support for AirPlay too.

While the YSP-5600 can be bought for £1,600 and partnered with any existing subwoofer, we're reviewing it in its YSP-5600SW iteration (£1,900) which includes a bundled Yamaha room-shaker, the wired/wireless NS-SW300.

First reactions to the YSP-5600SW

are basically shock and awe. This combo plays loud with crisp front-of-house imaging.

The opening of *Star Trek* (Blu-ray, DTS-HD MA 5.1) sees the Enterprise attacked by the invading warship of nefarious Nero. The Yamaha throws sonic debris wide and high. When Captain soon-to-die flies to meet the giant invader, his shuttle thrums deep and lands with audible solidity; the ambiance of the alien vessel is all too vivid. When evacuation calls, the soundstage is alive with incident; not a single emotional beat is lost as James T. Kirk is delivered in the escape pod.

A head for heights

The real test of the YSP-5600SW is recreating a Dolby Atmos soundfield. Yamaha boasts the system is comparable to a 7.1.2 Atmos system. In truth, it's not far off. I've never auditioned a soundbar that truly replicates the surround soundstage of physical speakers, and that remains the case here. But the YSP gets tantalisingly close. What it can do with some authority is deliver the height indicative of an Atmos experience.

Gravity has one of the best Atmos mixes heard to date, with inventive channel isolation: the opening scene features comms dialogue top right, panning left across the front soundstage, which the YSP handles well. Then the debris shower hits the Space Shuttle with enormous force, and the impact is jolting. Both the weight thrown by the soundbar and the tightness of its imaging are revelatory.

When we're in Bullock's helmet, her voice is high and reverberant. When the POV shifts

SPECIFICATIONS

YSP SOUNDBAR DRIVE UNITS: 44 x beam speaker array; 2 x 4.5in subwoofers
POWER OUTPUT (CLAIMED): 128W
CONNECTIONS: 4 x HDMI inputs; 1 x output; 2 x optical; 1 x coaxial; Ethernet; stereo phono
DOLBY ATMOS/DTS-HD MA (DTS:X) COMPATIBLE: Yes/Yes
SEPARATE SUB: Yes. NS-SW300 with 250W amplifier and 10in driver
REMOTE CONTROL: Yes
DIMENSIONS: 1,100(w) x 93(h) x 212(d)mm
WEIGHT: 11.7kg
FEATURES: MusicCast compatible; wireless subwoofer receiver; integrated Wi-Fi; Bluetooth; AirPlay support; Ethernet; RS-232 and IR control ports; wall-mounting option; IntelliBeam auto calibration set-up; ARC HDMI output; HDCP 2.2 and 4K passthrough; 10 x Cinema DSP modes; Compressed Music Enhancer; app controller

HCC VERDICT

Yamaha YSP-5600SW

→ £1,900 approx → www.uk.yamaha.com
 → Tel: 0844 811 1116

HIGHS: L/C/R imaging; good Dolby Atmos height FX; excellent subwoofer integration; MusicCast compatibility; likes difficult rooms with lots of hard surfaces

LOWS: Manual intervention needed after IntelliBeam optimisation; doesn't convincingly image to the rear; crude text interface; single HDCP 2.2 HDMI input

Performance ★★★★★
Design ★★★★★
Features ★★★★★
Overall ★★★★★

outside, the soundstage goes from quasi binaural to near-mono and the subwoofer throbs. This is terrific stuff full of body, attack and detail – the multi-driver array exhibits a forceful midband adept at dialogue. It's hands down the best-sounding two-box cinema solution I've heard this year

Of course, with all this excitement about immersive audio, it's too easy to forget that the YSP is also MusicCast-enabled, which means you can not only throw it music from your mobile device, but include it as part of a multiroom system. Networked audio playback covers a good range of files and codecs too, including MP3, WMA, AAC, WAV and FLAC ■

AV INFO

PRODUCT: Dolby Atmos soundbar and wireless subwoofer

POSITIONING: Top-of-the-range YSP sound projector

PEERS: Arcam Solo+/Sub; Sony HT-ST9

Canton's wideboy

Canton has strengthened its soundbase lineup with a newer, larger model that **Adrian Justins** says makes sense in this era of bigger and bigger TVs



ALL SOUNDBASES PRETEND they're ready for the task of doubling up as a plinth for your flatscreen TV, yet some tend to be quite narrow, making them inelegant – and sometimes impractical – partners for larger-sized screens. The introduction of Canton's lengthy DM100 is therefore a welcome move.

This successor to the previously well-reviewed DM50 and DM75 models is 1m wide and 33cm deep. This makes it well-suited to screens of 46in and above. In fact, my Samsung UE46F8000 TV looks perfect on it, with the curved stand reflecting slightly in the Canton's gorgeous black glass top (it's also available in silver). You can, of course, use the 'base with a 55in or even 65in screen. It's rated to accommodate loads of up to 40kg.

Canton's DM100 isn't just a larger version of the more junior models with more drivers – two tweeters, four midrange and four bass drivers – and more power (200W). It introduces several new features, including a Voice sound setting to boost dialogue clarity, automatic selection of Bluetooth input, and an IR delete function for the removal of unwanted remote control commands.

Legacy features include the 2.1-channel

output, adjustable lip sync, dynamic range control, compatibility with most TV remote controls and the same roster of sockets: one each of stereo phono, optical and coaxial inputs. So no HDMI, and while those digital inputs can handle Dolby

Digital, DTS isn't supported. For the simplest hookup, use your TV as a hub, feeding the DM100 via optical.

For operation, the Canton provides no onscreen display, just a three-character LED hidden behind the grille. The candy bar-sized remote control is nicely weighted and has good, rubberised buttons that respond well. It's not backlit, though, and you're required to scroll through inputs. Still, at least you can tweak the volume easily enough and make quick adjustments to bass and treble.

Music maestro

Kicking off with some music streaming, the DM100's apt-X Bluetooth mode proves highly adept at serving up an impressively wide dynamic range. The deep bass in *L\$D* by A\$AP Rocky causes some reverberation and the bass in Martin Garrix's *Animals* isn't buttery smooth but does have terrific kick. With James Bay's *Hold Back The River*, imaging is a bit narrow (despite the soundbase's considerable width) yet the soundfield is wonderfully coherent; the raspy vocals and snare drum don't project too far forward in the mix. Fully-orchestrated classical music shows off the DM100's talent for detail retrieval and its ability to go loud, with a hi-res download of Mozart's *Violin Concerto No. 4 in D Major* sounding highly polished and balanced through the registers.

The 'base really gets going with TV dramas and movie soundtracks. *Bored to Death* (Sky Atlantic) shows its panache with subtle effects, such as when Jonathan cocks a gun, slams a door, sprints and slides on a gravelly pavement. Dialogue is excellent, courtesy of a robust mid-range, and everything again sounds nicely balanced. Things get even better with Blu-rays. Via the DM100, *The Expendables*

SPECIFICATIONS

DRIVE UNITS: 2 x 0.75in tweeters; 4 x 2in midrange drivers; 4 x 4in bass drivers

AMPLIFICATION: 200W

CONNECTIONS: 1 x optical audio input; 1 x coaxial audio input; analogue stereo phono input; subwoofer output

DOLBY TRUEHD/DTS-HD MA: No/No
SEPARATE SUB: No

REMOTE CONTROL: Yes

DIMENSIONS: 1,000(w) x 69(h) x 330(d)mm
WEIGHT: 12.1kg

FEATURES: apt-X Bluetooth; adjustable lip-sync; DTS TruSurround; Dolby Digital; can be controlled from existing TV remote control; Voice sound setting to boost dialogue clarity; Eco mode; IR delete function

HCC VERDICT

Canton DM100

→ £530 approx → www.cantondm.co.uk

HIGHS: Wide enough for larger screens; straightforward to use; accomplished, engaging performance

LOWS: Bass can lack control; remote not backlit

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

3 becomes an absolute assault on the senses with guns firing, bullets pinging, bells ringing, helicopter blades whirring, train carriages rattling and more. The soundbase presents this sonic storm with assurance and clarity, so that you're aware of each effect without feeling overwhelmed. Consequently you feel fully engaged with the movie.

Fantastic Mr Fox's soundtrack, which is less extreme, is a sheer delight. Dialogue is spot on and soundtrack details – a throaty car exhaust, a ticking watch, a strummed guitar – are an exquisite pleasure to hear. The soundbase does utter justice to the carefully crafted mix.

So Canton's wideboy DM100 is highly impressive, particularly as to find another soundbase with this much top-plate real estate you would need to consider Focal's Dimension – nearly twice as expensive. Easy to use and sounding as good as it looks, it proves that Canton is still setting the soundbase agenda ■

AV INFO

PRODUCT: Soundbase for largescreen TVs

POSITIONING: Canton's top dog in its DM series

PEERS: Sony HT-XT3; Philips Fidelio XS1; Canton DM75

Catwalk soundbar

Does this slick-looking audio upgrade also deliver sonic thrills? **Adrian Justins** reports



COMPARING SOUNDBARS WITH full-fat surround sound systems, rather than the weedy speakers built into televisions that they are designed to replace, does them a disservice. For situations where surround sound simply isn't a realistic proposition, a soundbar is the sonic equivalent of going from factory-produced scones with squirty cream to an afternoon tea at the Ritz.

The Kubik One is DALI's first soundbar to come out of the oven. The brand refuses to call it a soundbar, though, preferring instead the label of 'sound system', essentially because the model has a range of inputs including wireless Bluetooth and because it can handle 24-bit/96kHz music files.

Spec-wise it isn't a stunner. It has no HDMI inputs, no wireless subwoofer and no decoders for Dolby Digital and DTS, favouring PCM all the way, which is input via either of its two optical inputs. From an imperfect start, though, let's focus on positives. Certainly, the Kubik One is a substantial and impressively designed object with eye-catching looks.

Colour-wise, it laughs at the ubiquitous black and silver finishes favoured by most other makers and gives you grille options of black, white or red. Additionally, you can order a replacement grille in blue, lime, orange, purple, grey or 'petrol green'.

AV INFO

PRODUCT: Premium soundbar with Bluetooth

POSITIONING: DALI's debut soundbar

PEERS: Yamaha YSP-2500; Monitor Audio ASB-2

The Kubik One has four separately powered drivers – two soft textile 1in dome tweeters and two 5.25in wood fibre mid/bass cones. The frequency range is rated at 48Hz-22kHz, with the crossover set to 3kHz.

Fashioned from a single piece of extruded aluminium that aims to reduce coloration and distortion, the unit weighs a hefty 9kg and there's not a hard or square edge to be seen. All in all, it's tougher and better turned out than Chris Eubank at a Buckingham Palace garden party.

LED's play the music

There is much to admire about the Kubik One's performance. The power output is impressive for the size of the thing, and volume can be dialled up without fear of distortion or strain.

Some soundbars require hard work with EQ adjustment to get the best out of them. Once the bass output is set on the rear of the unit, that's not an option here. This happily pays off for DALI, as the Kubik One turns out a solid, even-handed sound that's consistent throughout the dynamic range.

Sport such as live football is controlled so that the commentator's vocals are nicely balanced against the roar of the crowd. The lack of a subwoofer generally proves a moot point, with the soundbar itself providing better than expected slam and extension. The soundtrack to *Cloudy with a Chance of Meatballs* is nicely handled, so that as the spaghetti tornado rips through town and giant portions of mince bounce on the ground, the bass is suitably chunky. Individual objects such as cars, a man in a bathtub and tin cans can be

SPECIFICATIONS

DRIVE UNITS: 2 x 1in soft textile dome tweeters; 2 x 5.25in wood fibre cone mid/bass drivers
AMPLIFICATION (CLAIMED): 100W
CONNECTIONS: 2 x digital optical; analogue stereo phono; 3.5mm mini jack; microUSB; subwoofer line out
DOLBY TRUEHD/DTS-HD MA: No
SEPARATE SUB: No
REMOTE CONTROL: Yes
DIMENSIONS: 980(w) x 162(h) x 102(d)mm
WEIGHT: 9.6kg
FEATURES: Wall-mounting; Bluetooth 3.0 aptX; Class D amplifier; claimed frequency response of 48Hz-22kHz; one-piece aluminium chassis; interchangeable front fabric grille; IR learning; Auto standby option; gain adjust; bass output slider selector

HCC VERDICT

DALI Kubik One

→ £800 approx → www.dali-uk.co.uk

→ Tel: 0845 644 3537

HIGHS: Uncompromising build quality; stylish design; even, powerful sound

LOWS: Bass extension not amazing; no HDMI inputs/output; lacks onboard Dolby Digital or DTS decoding

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

picked out as they hurtle along, panning nicely across the soundstage. Meanwhile, Flint's dialogue is pleasingly solid and resonant.

Musically, the model is a joy. Streamed over Bluetooth from a laptop, a 24/96 download of *Little Lies* by Fleetwood Mac has terrific vocal detail whilst the introductory bass to Jacko's *Billie Jean* is purposeful and well defined.

Going for glamour?

All told, the Kubik One is a highly competent performer, with no noteworthy chink in its performance armour. It's also much easier to operate, and much more stylish, than some of the better-connected models at this price such as Yamaha's YSP-2500. If you like a bit of glam in your movie room, you'd be silly not to give it serious consideration ■

Sony's shining star

Looking for a soundbase to boost your TV's sound and get to grips with your music needs? Look here, says **Mark Craven**



THE HT-XT3 IS a soundbase with a Smart heart. Sony's £450 newbie flaunts Wi-Fi, Bluetooth, app control, multiroom support, screen mirroring and media streaming, while its conservative rivals offer little more than an optical audio socket. And it does all this remembering that sound quality still matters.

As a 2.1 design the HT-XT3 doesn't make any bold claims about virtual surround sound. The driver array mixes a pair of underside 4.5in woofers with coaxial mid/highs on the front fascia. These suspend an 18mm dome tweeter atop a 65mm Magnetic Fluid mid-range unit. Total power is rated at 350W, with 120W going to the woofers.

Tasked with bringing some sonic flair to *Dawn of the Planet of the Apes*, the HT-XT3 performs admirably and displays healthy dynamism; big audio events sound like big audio events. When a grizzly bear makes a sudden appearance during the opening forest hunt sequence, I almost jumped.

Low-frequency punch is good; meaty enough to cherish the bass throbs that modern movie soundtracks are littered with and nuanced too. The sequence in *Godzilla* (2014, Blu-ray) where soldiers encounter the

M.U.T.O. by the railway bridge is resplendent with distinctive low grunts and thumps. And with music, it rolls along nicely with the basslines in Mudcrutch's *Scare Easy*. The HT-XT3 has an inviting, slightly warm tone that will suit most tastes.

A button on the handset offers a subwoofer level adjustment. I found the default a little shy, so nudged it up to maximum. This had the effect of swamping the soundstage entirely. Go too far the other way and bass completely disappears. Be careful.

Detail delivery drivers

The HT-XT3 has a crisp, high-frequency performance, which makes soundtrack details, such as the cocked hammer of a handgun in *Transporter: The Series*, stand out. Compared to my flatscreen, the difference is as clear as night and day – even *Coronation Street* becomes more dramatic.

An issue with the Sony's audio is that its soundstage is rather narrow. It could do with widening out. Tom-tom drum rolls show the limits to its range. W.A.S.P. drummer Frankie Banali's kit sounds small as opposed to the glam rock excess it should be. With movies, this tight soundstage limits the impact of kinetic onscreen action – *Transporter's* Marseille car chase doesn't feel as broadly staged as it probably should. However, it's still engrossing, with snarling engines thrust forwards.

Connectivity is generous, with a trio of HDMI inputs tethered to an HDMI output (with ARC). Much of the soundbase competition doesn't offer any HDMI switching at all. The specification is 2.0, with passthrough of 4K up to 60Hz. HDCP 2.2 compatibility is offered on the HDMI 1 input and the output.

To get the slickest user experience from the HT-XT3 you need to hook up via HDMI, as that way you can access the PS-style XMB onscreen display. Go here and you can make the initial Bluetooth activation. Hitting the 'Pairing' button on the remote won't get you anywhere until you've done this.

SPECIFICATIONS

DRIVE UNITS: 2 x 4.5in woofers; 2 x coaxial mid/high drivers

AMPLIFICATION: 350W

CONNECTIONS: 3 x HDMI inputs; 1 x HDMI output (ARC); Ethernet; optical digital audio input; USB; 3.5mm analogue audio input

DOLBY TRUEHD/DTS-HD MA: Yes

SEPARATE SUB: No

REMOTE CONTROL: Yes

DIMENSIONS: 750(w) x 83(h) x 358(d)mm

WEIGHT: 10.5kg

FEATURES: Bluetooth 3.0; NFC; built-in Wi-Fi; Google Cast; compatible with Song Pal app; Sony multiroom support; ClearAudio+, Clear Voice, Movie, Music, Night, Sports, Standard modes; S-Master HX digital amplifier; DSEE HX compressed audio upscaler; 4K passthrough; HDCP 2.2

HCC VERDICT

Sony HT-XT3

→ £450 approx → www.sony.co.uk

→ Tel: 0207 3652413

HIGHS: Crisp, clear and well-balanced audio; excellent connectivity; unobtrusive design; loaded with Smart features

LOWS: Quite a narrow soundstage; tiny front display; reflective top plate

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Many (but not all) of the functions accessible from the onscreen menus are mirrored on the app controller. This proves better in terms of operation than using the standard remote. With the latter, changing inputs is a case of scrolling through the options on the soundbase's tiny front display; the app offers graphical icons and is pretty responsive. On the other hand, simple volume tweaks are quicker on the zapper.

Style-wise, the HT-XT3 is, in essence, a black oblong. Sony adds some glamour with a shiny glass top plate, although this is quite reflective, and will in all likelihood be directly below your TV screen. Build quality seems very good, and the unit is much heavier (10.5kg) than I imagined. Screens up to 65in and 50kg are supported ■

AV INFO

PRODUCT: Feature-laden soundbase speaker

POSITIONING: Sony's current soundbase king

PEERS: Cambridge Audio TV5; Canton DM50

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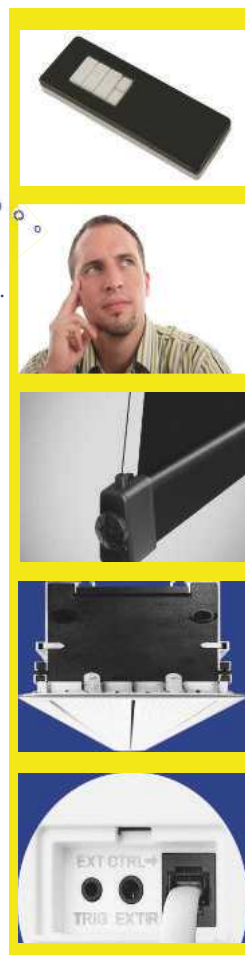
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SETC240WSF-ATR	2340 x 1320	92" x 52"	2935 x 155 x 170	16:9
SETC270WSF-ATR	2670 x 1500	105" x 59"	3245 x 155 x 170	16:9

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The champion of 4K sport

BT has scored an early goal in the Ultra HD content race with the launch of Europe's first 4K channel. **Adrian Justins** puts BT Ultra HD Sport and Humax's new hardware to the test



TEN YEARS AGO I wandered into the Tokyo equivalent of Currys and saw an HD broadcast for the first time. The clarity blew my mind and I've never forgotten the moment. Since then nothing that's been broadcast has had the same impact. That all changed when the Humax DTR-T4000 turned up, the UK's first set-top box to cater for 4K TV owners, as part of the BT TV ecosystem.

There's a lot more to the DTR-T4000 than just UHD, being a fully-fledged YouView PVR with seven-day rollback EPG, an array of on-demand content (some free, some paid for) and access to BT TV. There's a 1TB tuner on offer, and connectivity includes the all-important HDMI 2.0 socket capable of outputting 2160/50p images.

Not so long ago the BT TV onscreen interface was more complex than Spaghetti Junction. Things have improved greatly and the remote control works nicely in tandem with the OS, which is quite enjoyable to use, moving slickly along its two-tier carousel of options.

The 1TB capacity of the internal hard disk is perhaps a bit mean as you can only record 60 hours of UHD material, but it is sufficient for around 250 hours in HD, 600 hours in standard-def, or somewhere in between for a mix of the three. Recording two live UHD football matches (five hours and eight minutes in total) filled nine per cent of the hard disk.

To access the UHD channel you must be a BT broadband customer (of the Infinity variety – a fast connection is essential) and a BT

TV Entertainment Plus subscriber (£15/month). You get 248 channels, including a decent roster of aerial-delivered non-4K channels and broadband-delivered BT TV ones. Included in the subscription is the BT Sport Pack (BT Sport 1, BT Sport 2, BT Sport Europe, BT Sport ESPN), which includes all of the UEFA Champions League and a number of Premier League games. One or two live matches are shown in 4K on the Ultra HD Sport channel. Other sports lined up include MotoGP, UFC and rugby. To help satiate your desire for 2,160p material, there's a handful of short promos in 4K designed to show off the format, located in the BT TV portal.

The EPG is a paragon of onscreen guides, so that finding and recording shows is about as easy as it gets. The PVR is highly responsive apart from taking its time to boot up.

Soccer spectacular

When viewed live or in replay the quality of the UHD pictures (in this case on a Samsung UE55JU7500) is truly spectacular, with those additional pixels paying rich dividends in terms of definition and clarity. And, from my early football viewings, it's clear the event director is choosing shots that take advantage of this, hunting out wider angles that allow you to see more of the pitch and stadium.

A major benefit is how well defined nearly everything is. Large amorphous areas such as the turf still look like a solid carpet rather than lawn grass, especially when the camera pans. The frame rate of 50fps combined well with my screen's processing to keep everything supremely smooth, although the shape of the ball did slightly distort sometimes. Note that you could partner this PVR with a Full HD TV (the HDMI output can be set to 720p and 1080p) and still enjoy those 50fps broadcasts.

SPECIFICATIONS

HDD: Yes. 1TB
CATCH-UP CHANNELS: Yes. (BBC iPlayer, ITV Player, All4, Demand 5, BT Player, S4C)
CONNECTIONS: 1 x HDMI; 1 x optical audio; 1 x Ethernet; RF aerial loopthrough; 1 x USB (charge port)
DIMENSIONS: 234(w) x 40(h) x 149(d)mm
WEIGHT: 1.1kg
FEATURES: 14-day (seven-day rollback) YouView EPG; Series Link; live pause, rewind, fast-forward; PCM stereo or Dolby Digital+ sound output; HDMI UHD 8-bit/10-bit colour output; 2160p/1080p/1080i/720p output; on-demand content (Sky Store, Curzon Cinema, Nat Geo Wild, E!, SyFy, Universal, Animal Planet, Investigation Discovery, Sony TV, Discovery, TLC, History, Fox, Comedy Central, MTV, Now TV, Milkshake!, UKTV Play, Quest); parental controls; audio description; subtitles

HCC VERDICT

BT TV UHD box (Humax DTR-T4000)

→ Installation plus £15/month sub
 → www.bt.com/ultraHD
 → Tel: 0800 800 150

HIGHS: Pin-sharp UHD image clarity and detail; slick menu system; YouView seven-day rollback EPG; plenty of catch-up content

LOWS: Lack of UHD content; requires BT broadband; box slow to boot up; no Netflix yet

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

During a Chelsea vs Arsenal fixture, one shot showed Jose Mourinho standing on the touchline. The faces of around 800 supporters were clearly visible behind him. When Eden Hazard took a free kick outside the Arsenal box, the camera zoomed in slightly so that every player appeared pin-sharp against the turf. It was football with a real sense of drama.

Colour fidelity and contrast of the 4K content were first-rate. Looking at the same game on the non-4K BT Sport HD channel, it was as if someone had smeared vaseline on the screen.

So UHD TV is here, and not before time. Those already signed up for BT broadband are advised to upgrade as soon as possible ■

AV INFO

PRODUCT:
1TB YouView PVR with 4K capability

POSITION:
The current BT/YouView flagship

PEERS:
Sky+HD;
Virgin Media TiVo

A little goes a long way

Artison's Nano 1 is the smallest subwoofer **Mark Craven** can remember encountering. So what's the appeal of a bijou bass box?



WHEN IT COMES to bass, bigger is generally better. After all, hitting low frequencies at high output requires large drivers able to shift plenty of air, and said drivers obviously need to be mounted in sizeable boxes. In an ideal world, we'd all have 18in woofers the size of a Smart car.

But that utopia is unrealistic. More often we crave subs that'll do justice to a movie's LFE channel yet fit snugly into our system; trading in a few Hz bass extension for a manageable form factor and a sensible price tag.

Artison's Nano 1 takes that craving to the extremes. Billed by the US marque as the 'world's smallest high-performance subwoofer,' it is insanely compact (just 19cm wide) yet employs dual, active 6.5in bass drivers – thus claiming the same surface area as a single 8in woofer – scared into life by a 300W amp and DSP engine. The rigid

aluminium-based enclosure and internal design aim for a vibration-free, inert box, and it claims a frequency response down to 32Hz (-3dB).

In use, the Nano performs admirably, with musicality a strong point. From the disturbed drum 'n' bass of Ed Rush &

Optical's *Sick Note* to the frothy pop of Meghan Trainor's *All About That Bass*, this diminutive woofer grabs on to a track's low-end and runs with it. Its output is fulsome and inviting, tight rather than bloated.

And with the Châlus Castle attack sequence in *Robin Hood* (2010, Blu-ray), the Nano handles the chaos well. Falling French archers hit the ground with morbid thuds; wooden siege equipment rumbles along with believable body. It goes reasonably loud, too, and free from any disagreeable cabinet rattle.

Ultimate extension is as advertised.

This sub drops deep, but not to subterranean depths. The delicious slow-mo bass drop that marks Tom Cruise's tumble into the deserted library in *Oblivion* loses its authority the lower it goes. But elsewhere in that sequence, the Nano easily adds scale to the soundmix as Cruise fends off a bullet-happy drone.

Bass in every place

Of course, if it's real depth you seek, the Nano isn't for you. And this wee woofer works well in other areas. Moved from movie room to office, it became the ideal partner to a pair of Simple Audio desktop speakers. And I can envision it making a neat ancillary to a soundbar/base with a subwoofer output.

Operation isn't all plain-sailing: the Nano is a bit of a sleepy-head. It takes a good while to wake up (the manual suggests 30 seconds is normal as the onboard microprocessor boots), and while I appreciate having a remote control, the woofer wasn't quick to respond to this either. Going from low to high volume is no quick tap-tap-tap.

There's a wireless transmission kit available (£125), and this takes a while to pair, too (and on occasion took more than one try). For installations where tidiness is paramount (certainly one of Artison's targets) the wireless add-on will make a good buy; others will make do with careful cable management.

By no means budget, Artison's Nano 1 is a niche-filling sub that elicits a surprising amount of low-frequency fun from its Ant-Man body ■

SPECIFICATIONS

DRIVE UNITS: 2 x 6.5in bass drivers

ENCLOSURE: Sealed

FREQUENCY RESPONSE: 32Hz-160Hz

ON BOARD POWER: 300W RMS

REMOTE CONTROL: Yes

DIMENSIONS: 190.5(w) x 203(h) x 228(d)mm

WEIGHT: 11kg

CONNECTIONS: LFE input, via 3.5mm adaptor; phono line-level input; built-in wireless input for optional transmission kit

AV INFO

PRODUCT: Compact dual active 6.5in subwoofer

POSITION: Artison's debut standalone woofer

PEERS: REL Habitat; Velodyne MicroVee 6.5; Q Acoustics 3070S

HCC VERDICT

Artison Nano 1

→ £800 approx → www.red-line.co.uk

→ Tel: 01268 858 222

HIGHS: Compact form factor; tight, fluid bass delivery; optional wireless transmission kit

LOWS: Bigger, deeper bass is available for less; operation a little sleepy

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Awesome foursome

Adam Rayner auditions REL's good-looking quad-driver subwoofer



THE 212SE FROM sub-bass specialist REL is a mighty woofer capable of making profound, structure-borne seismic lows that will flow through walls and foundations. It probably isn't fit for semi-detached suburbia, unless you have The Best Neighbours Ever.

The vertically-aligned cabinet stands around 80cm high, and comes only in a shiny black finish. There are metal ornaments/handles on each flank, beneath a scooped-out dimple that somehow adds to the premium look of this £2,750 bass-maker. The front grille is a massive affair, held a good distance from the front baffle on shiny chromed pegs.

The space provided is because the active 12in drivers (of which there are two) are a bit bonkers. A mobile 2in cone travel is married

to a metal diaphragm that has massive rigidity and a truly pistonic motion. The two drivers share 1,000W of onboard amplification. Although, as the 212SE is rated at 1,700W peak output, each needs to be able to digest 850W of grunt at full-pelt, so requires a substantial

motor assembly. The rear of the sealed sub features what looks like another of these 12in transducers, but is, in fact, a passive bass radiator (PBR). This allows the system to resonate as low as the compliance of the drivers' suspensions, rather than a ported woofer's tuned frequency. It makes for a best-of-both-worlds between ported and sealed designs. And underneath is another 12in PBR pressure-loaded to your movie-room floor.

The amp panel is typical of REL. You get low- and high-level connections, as well as an input for 'I'. The idea is to connect both high-level (to your AVR's speaker terminals) and LFE simultaneously. REL says its approach is unique, but there are other brands that agree with the logic of this. It means the 212SE is fed not only the bass material steered to the LFE channel, but also that of the front L/R stage. It will bolster two-channel music, too.

The 212SE is also compatible with REL's LongBow wireless transmission system, which is an optional extra here. It works well.

Jack of all bass trades

The REL 212SE does deep and it does loud. Oddly, it also does subtle and it does brash, too. And sometimes it manages to do both at once. With *Gravity* (Blu-ray) you *feel* Sandra Bullock's heartbeat speed up and then slow down as she fights panic while drifting off into space. A monstrous cello note and a deep, dropping throb is used when an oxygen alarm becomes critical. The huge, vast wobble at that moment went all the way down to infrasonics and made me truly understand her fear. It was breathtaking. Later, the poor love bangs her head inside the ISS. The thud imparted by the REL was sickeningly visceral.

At a more everyday level I still found it deliciously linear. The 212SE works beautifully at lower volumes, every bit as rich and effortless. Like a three-litre petrol turbo, it has a lot of vava-voom in store. A 5.1 DTS music track (Sting's *Heavy Clouds, No Rain*) showcased huge scale and a tremendous grip of the basslines. This big brute is very musical indeed.

If you truly 'get' deep bass, if you like your kit to be on show rather than hidden away and – above all – if you feel that urge for truly energetic audio, then the REL 212SE will be right up your street. And it's good value ■

SPECIFICATIONS

DRIVE UNITS: 2 x front-firing 12in long-throw die-cast aluminium chassis drivers with 2in linear stroke of travel; 1 x rear-facing 12in passive radiator; 1 x down-facing 12in passive radiator

ENCLOSURE: Sealed

FREQUENCY RESPONSE: 21Hz at -6dB

ON-BOARD POWER: 1,000W RMS

REMOTE CONTROL: No

DIMENSIONS (WHD): 436(w) x 816(h) x 507(d)mm

WEIGHT: 55.3kg

CONNECTIONS: Low-level stereo phono inputs; LFE input; high-level Neutrik Speakon input

FEATURES: Compatible with proprietary Longbow™ wireless signal transmission system (optional); supplied speaker-level cable with Neutrik Speakon connector

AV INFO

PRODUCT: High-end cinema subwoofer

POSITIONING: Sits alongside the Gibraltar series

PEERS: Paradigm Sub 15; Velodyne DD15+; Monitor Audio Platinum PL15

HCC VERDICT

REL 212SE

→ £2,750 → www.rel.net

→ Tel: 01656 768 777

HIGHS: Glorious looks; sumptuously deep, tight output; wireless transmission compatibility; flexible setup options

LOWS: Only available in shiny black; slightly favours slam over subtlety

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

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No compromise Atmos

Thanks to KEF's remarkable Uni-Q drivers, the R50 Series Atmos module is the upfiring speaker you've been waiting for, says **Steve May**



SPECIFICATIONS

DRIVE UNITS: Uni-Q driver array – 1in vented aluminium dome tweeter; 5in mid/bass aluminium driver
ENCLOSURE: Sealed
FREQUENCY RESPONSE: 105Hz–18.5kHz
SENSITIVITY: 85dB
POWER HANDLING: 25–100W
DIMENSIONS: 174(w) x 180(h) x 259(d)mm
WEIGHT: 4.5kg

DOLBY-ENABLED SPEAKERS ARE

proving surprisingly effective at delivering the height channel within a Dolby Atmos sound system. Designed to reflect sound off flat ceilings, they're not only easier to install than in-ceiling architectural speakers but create an authentic ambiance in a smaller room that's difficult to replicate with direct alternatives.

The catch is that many Dolby upfiring speakers are often only truly effective when placed in close proximity to the seating area – which can lead to some rather awkward placement issues. KEF aims to correct that with its R50 module, the latest addition to its high-end (and extremely glossy) R Series line.

The R50 utilises the brand's trademark Uni-Q point source driver array. A 1in aluminium tweeter and 'tangerine waveguide' is positioned at the centre of a rigid 5in mid/bass unit, encircled by a distinctive surround to minimise distortion.

To audition a pair of R50s, I shipped in a full complement of R Series speakers to create a homogenous 5.1.2 Atmos array. The setup

used a pair of R500 towers, R200c centre, two R100 bookshelves and the compact R400b subwoofer. This assemblage proves handsome in the extreme.

The R50s plonk exactly onto the front-facing floorstanders, but are also a perfect match

with the brand's bookshelf models. They don't lock on though, just perch.

The R50 is beautifully finished, sporting a piano gloss lacquer offset by contrasting silver drivers. Aesthetically, the enclosure looks gorgeous. While it's tempting to leave the supplied cloth grille in the box, projector owners should note that the metallic drivers actually reflect the light from any front-facing PJ. This glinting could prove a distraction.

The full Atmos experience

Overall performance fittingly shines. The R50 is properly full-range, dropping low yet capable of crisp highs. Given that pretty much any object can be panned into the Atmos channel, it's comforting knowing the R50 has the chops to respond – be it a sharp, dynamic report in *American Sniper*, or rousing, symphonic score in *Jupiter Ascending*.

What I found truly remarkable, though, was the reach of the Atmos channel. Typically, rival Dolby boxes tend to attenuate at distance. However, I could sit the R50s on the front speakers a good 3.5m away from my couch and still enjoy an excellent sense of height. The overall soundstage was spacious (the Dolby Atmos demo clip *Amaze* offers grin-inducing insect effects) and naturalistic.

The KEF R50 is easily the best sounding Dolby Atmos speaker I've heard, both in terms of 3D clarity and effective dispersion. The catch, of course, is that you'll probably want R Series speakers to match... and perhaps four R50s would sound even better than two... ■

AV INFO

PRODUCT: Dolby-enabled Uni-Q speakers

POSITION: KEF's first dedicated Dolby Atmos speakers

PEERS: Definitive Technology A60; Onkyo SKH-410

HCC VERDICT

KEF R50

→ £600 approx (pair) → www.kef.com
 → Tel: 01622 672 261

HIGHS: Spacious, full-range audio performance; extended Atmos reach; gorgeous design and finish

LOWS: Uni-Q driver (ironically) light-reflective; speakers perch rather than lock atop matching R Series speakers

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Fire TV embraces 4K

Faster and more powerful, Amazon's second-generation UHD-ready media streamer is a home cinema must-have, says **Steve May**

WHILE THE TRADITIONAL content providers have been slow to muster 4K arms, OTT streamers have really got the bit between their teeth. Amazon's second-generation Fire TV media box confounds expectations in that it's both 4K-enabled and unfeasibly cheap at just £80. Indeed, Amazon itself doesn't even attach a premium to its UHD service – you just need an Amazon Prime subscription (£79), or be prepared to Pay-Per-View (not great value).

Cosmetically this new model follows the diminutive lines of its predecessor. Laid flat, it stands 17.8mm high and can easily piggy-back atop more substantial items in your kit rack. There are differences, though. The optical digital audio output has been ousted, replaced here by a microSD card slot. While this can't be used for any media playback (so don't try and view photos, music or videos) it does provide significant extra storage space for apps (up to 128GB). The box itself has 2GB of onboard memory, with 8GB storage, enough for the media service apps you'll want to use. However, start downloading Amazon's casual games and you'll quickly run out of space.

The games themselves look and play well. A MediaTek quad-core processor means the box is 75 per cent faster than the original player, and an Imagination Technologies

Power VR GX6250 graphics engine keeps things pretty. With more horsepower at its disposal, it's also a better Plex media server client than its forebear. The box also offers superior voice search via a diddy remote with integrated microphone.



Both Netflix and Amazon Prime Instant Video UHD services are supported via its HEVC decoder – and between the two that equals a healthy amount of 2,160p content. Both offer a growing number of 4K TV shows – including *Bosch*,

Better Call Saul, *Marco Polo*, *Daredevil* and *Jessica Jones* – while Amazon is stacking up the movies. *Elysium* is a standout offering, but there's also a wide range of stuff from *Fury* to *Spider-Man 3*, via *Ghostbusters 2* and *MIB 3*. Image quality is generally excellent. Fine detail appears extremely high, and there are no overt compression artefacts. It remains to be seen how this will compare with UHD Blu-ray, but for now we can confidently say picture quality is superior to streamed HD.

Hardware requirements

To receive the UHD connection you'll need a fast fibre broadband connection on the right side of 15Mbps. The little box is also HDCP 2.2-enabled, which means that to see UHD images your display needs a 4K input that supports it. Without HDCP 2.2, the Fire TV 4K will simply present you with HD. Similarly, while there's Wi-Fi (and Bluetooth) onboard, you'll want to use the Ethernet connection to secure UHD streams. 4K itself is limited to 30fps, the standard for movie and TV content.

It's not yet capable of delivering HDR, although Amazon doesn't rule out a firmware update at some point to allow this. Audio varies depending on content but multichannel can be delivered over HDMI.

Overall, I can't think of any reason not to buy this new iteration of Fire TV, even if you don't yet have a 4K display. It's fast and powerful, features a brilliant UI and works well as a regular catch-up TV device. Just get one ■

SPECIFICATIONS

CONNECTIONS: HDMI output; Ethernet; USB; microSD card
AUDIO FORMAT SUPPORT: Dolby Digital Plus; FLAC; MP3
VIDEO FORMAT SUPPORT: HEVC H.265/H.264
DIMENSIONS: 115(w) x 17.8(h) x 115(d)mm
WEIGHT: 270g
FEATURES: Bluetooth 4.1; dual-band Wi-Fi; voice search via mic-integrated remote; video output of 2,160p up to 30fps, 720p and 1,080p up to 60fps; controllable via Fire TV Remote app; Power VR GX6250 600MHz GPU; MediaTek quad-core processor; 8GB storage (expandable via microSD)

AV INFO

PRODUCT: 4K media player

POSITION: Amazon's current flagship streamer

PEERS: NVIDIA SHIELD; Roku 4; Apple TV; Now TV

HCC VERDICT

Amazon Fire TV 4K

→ £80 approx → www.amazon.co.uk
 → Tel: 0800 496 1081

HIGHS: Excellent 4K picture quality with fast broadband; fast, attractive UI; superior voice search; expandable storage

LOWS: HDCP 2.2-enabled HDMI 2.0 input required on display; currently no 40D catch-up

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Music fun, cubed

Mark Craven finds space in his life for Sony's smallscale Bluetooth speaker

YOU CAN GET the measure of an affordable gadget like Sony's SRS-X11 by how much you use it – and since getting my hands on this £60 Bluetooth speaker I've been using it plenty. It's followed me around the house, sat on a kitchen counter or a bedside table, and into the garden and beyond. It's cute, clever and easy to fall in love with.

The SRS-X11 measures just 61mm in all dimensions, and weighs a paltry 215g. It's portable in terms of size and in terms of functionality – the internal rechargeable battery (the device powers via microUSB) claims a lifetime of up to 12 hours. Inside is a 10W amplifier and three drivers, an active one facing front and two passive radiators on the adjacent faces.

You can get your music pumping via Bluetooth (with NFC one-touch hookup), 3.5mm input or USB.

Sound quality is enjoyable although obviously a tad limited in nuance. The overall



HOME CINEMA
Choice
RECOMMENDED

to do (one unit automatically hunts the other down), and status LEDs let you know which is left and which is right.

Overall, this speaker (available in black, white, red, pink and blue finishes) makes for a fun, and useful, accessory ■

The SRS-X11 comes with a carry strap

tone is bassy – which works better for Stevie Wonder's *Superstition* than talk radio – and a bit boxy (if you'll pardon the pun). However, this little gizmo makes a solid fist of sounding bigger than its dimensions, goes reasonably loud, and is perfectly adequate for uncritical listening.

A final neat trick of the SRS-X11 is the fact that two devices can be paired together to create a wire-free stereo array. This is very easy

HCC VERDICT

Sony SRS-X11 → £60 approx

Overall ★★★★★

BEYERDYNAMIC T70 → £330 approx

Beyerdynamic T70

Ed Selley says these cans pack an excellent all-round performance whatever you throw at them

HOME CINEMA
Choice
BEST BUY



THE T70s SIT about halfway up Beyerdynamic's current headphone range.

They use the company's own 'Tesla' driver system, so named because the annular magnet has a strength of one tesla (T) through the hole in the middle.

The T70s are the home version of the model – there's an easier-to-drive portable model also available (the T70P) – and are a closed design built around a pair of metal drivers of unspecified size. At 417g, they're not the lightest pair around, but Beyerdynamic has ensured excellent weight distribution and they feel impressively solid. The looks are unremarkable, but inoffensive too.

The T70s are extremely comfortable and are a pleasure to wear for long periods. And you'll want to keep donning the Beyerdynamics because they didn't put a foot wrong in this test. Connected to my Yamaha AVR, the T70s motor their way through the Brad Pitt tank

actioner *Fury* with real vigour. Explosions have tangible weight; shells and ricochets move convincingly around your head. Dialogue stays crisp and distinct amidst the mayhem. Everything sounds very together.

The different requirements of drumming drama *Whiplash* are also dealt with well. High-speed percussion is clear and immediate, the supporting brass has an accurate tonality, and it is easy to hear separate instruments in the mix. A Chvrches track (*Leave a Trace*) combines the need for heavyweight bass and a refined top end. It isn't hugely surprising to find that the T70s are on top form here too ■

HCC VERDICT

Beyerdynamic T70 → £330

Overall ★★★★★

DAC's the idea for Sony

These 'phones combine impressive performance with clever onboard tech, says **Adrian Justins**

HERE'S AN INTERESTING idea

– headphones with their own onboard USB DAC (with 24-bit/192kHz hi-res capability) and built-in S-master HX amp, allowing you to



bypass the potentially inferior silicon in your digital source, but without recourse to a portable DAC.

The headphones can, of course, receive an analogue signal from your phone/portable audio player using their 3.5mm line input, and work as typical passive cans. To take advantage of the internal DAC you need to take the digital path, and have the cans charged (battery life extends to around seven/eight hours). Source devices with a range of outputs are catered for – appropriate cables for Apple's Lightning connector, micro-USB, USB and Sony's proprietary Walkman connection are bundled. These plug into a micro-USB input on the left enclosure.

Superior sound

Sony's twin 40mm drivers deliver a superior sound, even in passive mode. These are extremely revealing cans, serving up impressive detailing across the frequency

range and effective soundstaging and scale. Bass is tight and punchy without being domineering.

Switch to digital mode and hi-res audio and the DAC proves its worth. A 24-bit/96kHz download of David Bowie's *Valentine's Day* shows a notable step up in terms of texture and timing – the guitars and Bowie's vocals benefit from the extra headroom.

The design and comfort of the MDR-1ADACs is first-rate, and you also get a neat carry pouch. They're a worthwhile audition for music lovers, particularly those with hi-res audio collections ■

HCC VERDICT

Sony MDR-1ADAC → £250

Overall ★★★★★

WETEK PLAY → From £95 approx

Player with a multiple personality

WeTek's quirky Play is a media player with a difference – as **Martin Pipe** discovers

THE DELIGHTFUL LITTLE

WeTek Play takes a different tack to media players with proprietary software systems, in that it runs the Android Jellybean OS with which many smartphone users will be familiar. Indeed, Google has itself certified the Play – which is built around a dual-core AMLogic processor, Mali graphics engine, 1GB of RAM and 4GB of flash storage.

You get an oval-shaped remote with buttons to deal with everyday usage and a mouse emulation mode. This is handy for navigating your way around the web with Google Chrome – one of the apps that's provided with the default pre-loaded firmware.

The Play supports Bluetooth and Wi-Fi; an Ethernet port is included too. AV connectivity is basic; the only alternative to HDMI and optical digital audio is composite AV. A back cover can be removed to reveal a slot for an optional (£20) tuner that's compatible with standard-



and hi-def TV.

WeTek OS Android

has an app for tuning in and (with storage plugged into one of the three USB ports) recording TV channels.

Among the Android apps is a basic media player, but WeTek also gives us the well-known Kodi/XBMC. This is slick, responsive, easy to use, web-controllable, deals with local and networked storage, and will play just about anything – up to 720p. Is that a problem? Not necessarily. The microSD card slot on the side can be used for playback of multimedia files,

but it can also be used to load alternative operating systems. These are freely available via dedicated forums. One, OpenELEC, is a version of Kodi that improves upon the WeTek OS firmware limitations. It can play Full HD video natively and will change video refresh rates to match that of

the source. Another – OpenATV – is based on software known as Enigma 2, a highly-specialised implementation of Linux and is enormously flexible.

The WeTek Play is therefore a neat media player with plenty of tweaking appeal ■

HCC VERDICT

WeTek Play → From £95

Overall ★★★★★

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Omnidirectional delight

Danny Phillips believes this egg-cellent speaker could crack the multiroom market

AFTER WATCHING SONOS take multiroom to the mainstream, Samsung jumped on the bandwagon with last year's impressive M3, M5 and M7 speakers, and now follows them with the flagship R7 (AKA the WAM7500).

Visually this is a real statement piece, particularly when perched on the optional tripod stand. And it gets even better close-up, with its classy soft-touch coating and chrome base.

The egg-shaped enclosure and Ring Radiator tech – developed at Samsung's new Audio Lab facility in Los Angeles – deliver omnidirectional audio that aims to sound the same no matter where you are in the room. A gap two-thirds of the way down



disperses sonics from the down-firing 5in woofer, while a 1in tweeter on top fires high frequencies through an 'Acoustic Lens'.

Unlike last year's models, the R7 doesn't require a dedicated 'Hub' to function – it works on your Wi-Fi network – and operation is easier thanks to a revamped smartphone app. The layout is more intuitive than before, cutting out unnecessary menus. You can send music from DLNA servers, Spotify, Deezer, JUKE, Napster, Qobuz, 7digital or 8tracks to other R7s around the house, or simply stream via Bluetooth 4.0. Two R7s can be used in a stereo pair or as rear speakers in a 5.1 setup – the level of flexibility here is impressive.

The R7 is a fabulous performer too, offering powerful, detailed and well-balanced music playback. Some Samsung systems have gone too tubby in the bass department but the R7's lovely sense of balance and refinement makes it the brand's best-sounding speaker to date. The omnidirectional dispersion really works too – music remained tonally consistent as I walked around the room, although there's a slight dip in bass if you place the R7 below waist height.

So overall, Samsung's R7 is a terrific multiroom speaker on all fronts – even if it is a little pricey ■

HCC VERDICT

Samsung WAM7500 (R7) → £500 approx

Overall ★★★★★

NOW TV BOX → £15 approx

Now TV is back in black

Sky's second-generation streaming box impresses **Grant Rennell**

THE LATEST ROKU-MANUFACTURED

box for Sky's Now TV 'net streaming service improves on the previous model by having a processor that's five times faster, 1080p rather than 720p video output capability, an Ethernet port (Wi-Fi still comes built-in), a microSD card slot and a USB port – although neither of the latter two could be used for anything at the time of writing. It's a considerable revamp in tech terms, and explains why this second-gen streamer costs £15, rather than a tenner.

Now in black, the Now TV box is a good-looking, palm-sized affair accompanied by a cute little remote control. It's easy to set up and has an appealingly simple user interface.

The lineup of pre-installed apps isn't bad and more can be downloaded. So as well as Now TV and Sky Store (movies to buy or rent) you can gorge on BBC iPlayer, ITV Player, All 4, Demand 5, BBC News, BBC Sport, Sky News, Sky Sports News HQ, TuneIn Radio, YouTube,



Spotify and more. Netflix, as before, remains absent. Amazon Video a is no-go, too.

Now TV includes live TV/on-demand content from 13 entertainment channels, Sky Movies, and Sky Sports (live streaming only). On-demand content and Sky Sports is available in HD. Various 'passes' are purchasable, and this is where, for many, Now TV earns its spurs – a Movies monthly pass costs £9.99; an Entertainment monthly pass costs £6.99. A day's access to Sky Sports will set you back the same.

Series boxsets in the Entertainment section are a major draw, but this isn't an all-you-can-

eat proposition – I found only the first seasons of *Game of Thrones* and *Penny Dreadful* available. Image quality – both live and on-demand – is solid, courtesy of Sky's adaptive bitrate streaming.

There's a lot to like here, especially if you want to watch Sky content without a sub or have a TV in need of a smart upgrade. Being able to take passes on an ad-hoc basis is a boon, and the movie content puts the likes of Netflix and Amazon to shame. The feature set doesn't compare with more expensive products like Amazon's Fire TV, but this bargain box fills a niche ■

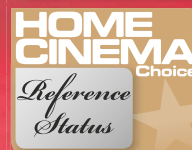
HCC VERDICT

Sky Now TV box → £15 approx

Overall ★★★★★



The VW520ES improves brightness and contrast over its predecessor



Projection revolution

Once again Sony is leading from the front where home cinema projectors are concerned.

John Archer gets to grips with its HDR-ready VPL-VW520ES

THE SELLING POINT of Sony's VW520ES is essentially this: for £8,800 it gives you both a native 4K resolution – something no other brand has yet been able/bothered to manage on a home cinema projector – together with high dynamic range playback. I've seen enough HDR to know that so long as it's done

right, it's capable of having a huge impact on a viewing experience. More so than the introduction of 4K resolution.

Helping the VW520ES 'do HDR right' are some eye-catching specs. The projector's dynamic contrast ratio (achieved via processing and a

dynamic iris system) is rated at a colossal 300,000:1 – 50 per cent higher than the contrast of its predecessor, the VW500ES [HCC #243]. There's a maximum brightness rating of 1,800 lumens from its 280W lamp, too. This represents a modest increase of 100 lumens. While it won't stack up in a numbers game against 'high-brightness' rivals and isn't suited to mega home theatres, it's actually an impressive figure – consider that yesteryear's JVC HD1 peaked at 700 lumens and you can see how the market has developed.

Colour, meanwhile, benefits from Sony's Triluminos system for boosting saturations and expanding the dynamic range, while the projector carries myriad tools for adjusting pictures to suit your tastes/content. These include gamma correction, colour correction, colour temperature adjustments and a range of colour space settings (stretching from the 'old' BT.709 standard up to BT.2020). You also get

a host of video processing systems taking in everything from noise reduction and motion handling to contrast and colour enhancements.

It's important to stress that the BT.2020 setting does not mean that the VW520ES can reproduce the full BT.2020 colour range. Or even the DCI P3 standard come to that. But it does mean the projector has the ability to emulate such settings as closely as its Triluminos and processing technologies allow.

Installation aids include fully motorised focus, 2.1x zoom and horizontal/vertical image shifting. The throw ratio extends from 1.38:1 to 2.83:1. A lens memory function allows you to store zoom/focus settings for different ratios.

Connections contribute to the VW520ES's prowess. The two HDMI inputs include support for HDR-friendly 10-bit playback – albeit only at 24fps. With 4K material running at 50 or 60fps the supported bit-rate drops to 8-bit. Since the vast majority of films are still

AV INFO

PRODUCT:
HDR-capable
4K/UHD home
cinema projector

POSITION:
Below only Sony's
pro-grade 4K
laser model

PEERS:
Epson EH-LS10000;
JVC DLA-X9000B

mastered and released on Blu-ray in 24fps, the projector should be able to handle the extra colour information of most of the 10-bit content likely to be coming in the future.

The VW520ES's delivery of HDR content is, essentially, mindblowing. Partly because it does – just – have enough brightness in its locker to deliver a sense of HDR's expanded luminance range, but mostly because it does a sensational job of delivering the extra colour range that HDR content brings to the table.

Sony-supplied footage of a Japanese mother and daughter in traditional dress enjoying a colourful birthday party on a balloon-filled boat [*sounds fun – Ed*], plus a gorgeous LG-created HDR 'travelogue' clip, are delivered – thanks in no small part, I suspect, to Sony's Triluminos technology

'This is a jaw-dropping sub-£10,000 home cinema projector – its 4K and HDR pictures are spectacular'

– with remarkable colour punch and richness. The bold reds and golds of kimonos and the glossy blues, greens and yellows of the balloons all enjoy extraordinary intensity and an enhanced sense of tonal definition, as well as standing out strongly against the dense greys and blues of the river and sky. This is so far in advance of the colour response you get from even the most masterfully produced standard dynamic range projector that it's as if you've died and gone to an AV heaven.

And there's nothing gaudy about this upsurge in colour performance. In fact, HDR pictures look much more realistic as well as far more eye-catching and attractive. Have we reached a point where we can actually get to see on a video display what the world really looks like? If not, then we're certainly a lot closer. It's not just the colours and luminance that make HDR on the VW520ES special, though. There's a tremendous depth to images here, with an expanded sense of contrast and more detail in dark areas. HDR pictures look solid and three-dimensional, somehow more textured than SDR 4K footage.

Forget HDR, though. The VW520ES needs to also shine with today's content. And this is exactly what it does. Standard dynamic range 4K clips of *Transformers* and the *Total Recall* remake, together with a variety of other 4K demo reels, all look exquisite. The VW520ES proves what a difference a native 4K res can make at the sort of large image sizes a reasonably bright projector can deliver. Detail reproduction is first-rate, while the best contrast performance Sony has ever delivered from a home theatre PJ helps delineate the

subtle light and tone shifts that separate the 4K wannabes from the real 4K deal.

The upscaling engine manages to remap difficult, grainy HD content like the Blu-ray of *300* to the projector's trio of 4K chips (and, yes, these are 4,096 x 2,160) without it coming across as noisy or in any way processed. This impressive uprezzing has been a part of the Sony stable since the first 4K model – the VPL-VW1000ES – landed back in 2012, and remains a stunning achievement.

And kudos is due to the advances Sony has made with its light engine. As mentioned, images look slightly brighter than those of its forebear; they also feature a more convincing contrast range underpinned by a rich, believable black level, with detailing retained in dark scenes to stop them seeming flat.

The contrast processing and dynamic iris systems show signs of improvement, clearly boosting contrast but with greater subtlety than before. Even the Motionflow feature is Einstein-intelligent. The True Cinema mode reduces judder without you really noticing.

Back to Pandora

Firing up *Avatar 3D* reveals the VW520ES to be excellent fun in stereoscopic mode. The HD 3D image appears detailed, the projector's strong contrast helps it deliver a fine sense of space and depth, and while there is a drop-off in brightness, there's still credible colour and engaging dynamism. There's more crosstalk ghosting around than I'd like, though; enough, at any rate, to leave largescale scenes like Jake's debut flight on an Ikran in *Avatar* looking soft in places.

You have to be careful with some aspects of setup. To deliver the best combination of image stability, contrast and light/colour balance, I had to leave the Dynamic Control feature off, the Advanced Iris set to around 72, and the contrast enhancer set to Low. There are a lot of adjustments here and it pays to familiarise yourself with their powers. A professional calibration might be in order.

I'd also recommend using the lamp set to 'high' to fully unlock the VW520ES's cutting-edge capabilities. This may not be possible if your viewing room is quite small as it causes an upsurge in the projector's fan noise. It will also impact the PJ's lamp life, which is rated at 6,000 hours in low.

Does it have rivals? Early demos of JVC's upcoming new projectors suggest they outgun the VW520ES where black level response is concerned. But none of those JVCs offer native 4K playback. And I wonder if this PJ has quite enough brightness to unlock the last drop of picture quality from the more aggressive HDR formats we're likely to see.

Yet these are mere bumps in the Sony's road to glory. Even without HDR its 4K pictures are spectacular; add in HDR and you've got a jaw-dropping sub-£10K cinema projector ■

SPECIFICATIONS

3D: Yes. Active shutter
4K: Yes. 4,096 x 2,160

CONNECTIONS: 2 x HDMI; USB service port; Ethernet port; 2 x 12V trigger ports; IR input; RS-232C

BRIGHTNESS (CLAIMED): 1,800 lumens

CONTRAST (CLAIMED): 300,000:1 (dynamic)

DIMENSIONS: 496(w) x 195(h) x 467(d)mm

WEIGHT: 14kg

FEATURES: SXRD projector system; 6,000-hour claimed maximum lamp life from 280W UHP lamp on 'low' lamp mode; 26dB claimed fan noise; multiple picture presets; Motionflow motion processing; Reality Creation processing; optical image shifting (vertical: +85%/80%; horizontal: +/-31%); motorized zoom (2.1x) and focus; HDR playback; Triluminos colour system; 60-300in screen size; 3,840 x 2,160 at 24p (10-bit), 50p/50p (8-bit); 1.38-2.83:1 throw ratio

HCC VERDICT



Sony VPL-VW520ES

→ £8,800 approx → www.sony.co.uk

→ Tel: 020 7365 2413

HIGHS: 4K pictures look amazing; HDR pictures look even more amazing; good setup flexibility; good price for what's on offer

LOWS: Some crosstalk with 3D; runs rather noisily in high lamp mode; a little fiddly to set up perfectly; slow to warm up/cool down; there are brighter PJs out there; 3D glasses not bundled

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★



NAD M17/M27 → £4,500/£3,500 approx



Revamped old Masters

NAD's energetic processor/power amplifier duo gives [Ed Selley](#) a taste for high-end home cinema that he quickly becomes used to

AV INFO

PRODUCT:
AV processor/
power amp duo

POSITION:
Multichannel parts
of NAD's high-end
Masters Series

PEERS:
Yamaha CX-A5100/
MX-A5000;
Parasound Halo

With this refreshed Masters Series range, Canadian brand NAD has gone to town. Wrapped in new casework, NAD's flagship components are a technical *tour de force* that come dressed in a sharp suit. Many of the models in the range have a stereo focus but the M17 processor and M27 multichannel power amp are a no-holds-barred assault on high-end home cinema.

The rapid pace of tech can catch boutique brands on the hop. There are, therefore, some caveats to be considered here. Most obviously, the M17 processor is currently devoid of HDCP 2.2 support, HDMI 2.0 connections or Dolby Atmos (and, indeed, DTS:X) playback. In a product that costs £4,500, this might initially sound inexcusable. However, the spec of the M17 as tested is not the final word in what purchasers can expect. In the top layer of the packaging is a letter explaining that your M17 can be returned to your dealer to be updated to HDMI 2.0 and HDCP 2.2 functionality when such an update becomes available.

NAD can promise this because its Master Series hardware uses a process called Modular Design Construction (MDC). Software and connectivity of the M17 can be adjusted to meet future requirements (a VM300 MDC Video Module is what's promised). You are

spending a fair amount of money on the M17 but hopefully it will see you good for a while.

Neither is the current spec of the M17 exactly minimalist. The NAD is a seven-channel processor with support for the usual retinue of flat surround formats and has a healthy selection of connectivity – both modern and legacy – including six HDMI inputs and a pair of outputs. Audyssey's idiot-proof MultEQ system (Pro iteration) is fitted for setup and equalisation, and the NAD ties all of this functionality together via a full-colour front-panel touchscreen that manages to show plenty of info at once without looking fussy.

There's no Wi-Fi, but Ethernet is offered. Get the M17 on your network and you can use NAD's control app. Note, however, that no home networking talents are offered. System builders are catered for by 12V trigger, IR and RS232 hookups, while AV preset modes allow speaker level and tone control settings to be saved for later recall.

Output to amplification is via either XLR or phono connections. You could, of course, use any power amp, but NAD's style-matched M27 is the obvious choice. The specs aren't likely to disappoint, either. The M27 is a seven-channel design, claiming a hefty 180W per channel with all channels driven and with minimal

THD. Under dynamic measurements, the M27 should swing 300W into those seven channels, which means there aren't many speakers you'd worry about partnering it with.

The numbers don't tell the whole story of the Masters equipment. It is only in the flesh that they start to make real sense. First up, they are beautifully built. The casework is totally inert, impressively tactile and if anything feels more expensive than the asking price. Seriously: the volume knob on the M17 is a thing of absolute wonder. The weighting and the absolute smoothness with which it operates is a little piece of unbridled joy.

I found myself walking up to adjust the volume by hand. Not that using the remote is much less of an event. NAD supplies the M17 with a handset made almost entirely out of metal that sits in your palm like an aluminium ingot.

Investing in a separate processor and amp is a potential money-saver. Even with its life-span extended by the modular design, the M17 will have a point where it is obsolete, but for as long as AV requires an amplifier – even if it needed to be augmented with extra

'Capable of incredible delicacy, and the ability to deliver huge dynamic punches when you need them'

channels – the M27 is a fine example of the genre and will be well up to the task of partnering another processor in the future, while at the same time a one-box solution typically has to be junked in its entirety.

Setup is straightforward. Menus are easy to navigate and the layout of the back panel is very logical. If you can set up a normal AV receiver, nothing about this duo will scare you.

I began with the M17/M27 connected to a quintet of Elipson Planet M speakers that live with me full time. Even with these diminutive cabinets, the NADs begin to show what they are about. Bolted to the M27, the little Planets seem to gain in size, scale and authority. This is more than a powerful amp; it is a seriously accomplished one, too. No one will buy the Masters Series to tickle a style-conscious sub/sat package, however, so I quickly reset my room with a Sonus faber Venere system. And with a few grand of Italian loveliness in place, the NAD duo really strutted its stuff.

With a favourite demo sequence – the rain-soaked climax of *Rush* – there was an effortlessness to the way these slabs of silicon moved effects around and provided any volume level I could possibly want. The layers of sound in the DTS-HD mix were beautifully defined and easy to distinguish, but combined to create a delightful, believable whole. The

M17 can put sonic details exactly where they need to be.

And despite the tremendous power and processing ability, this partnership is remarkably self-effacing. During a spirited rendition of the final plane-hurling silliness of *Into the Storm*, I realised that almost all of my notes applied to the speakers rather than the NADs, but their influence is there nonetheless. Taking them away and listening back to the same scene via my integrated AVR, I found that the way that the wind effects are all-encompassing but never overpower dialogue is something the NAD duo was nailing.

This ability isn't limited to action and explosion-filled sequences. The brooding soundscapes of David Fincher's thriller *Gone Girl* allow this system to illustrate just how masterly it can fill a space with the soundmix's background details and Trent Reznor's unnerving, brilliant score. Even at low levels, the sound pulses with energy and sheer life. The Masters Series is capable of incredible delicacy, backed up with the ability to deliver huge dynamic punches when you need them, making watching movies a whole lot of fun.

Speed and energy

The M27 amplifier makes for an interesting comparison to the Parasound Halo A21/A31 duo (HCC #240). The NAD lacks some of the almost liquid smoothness that those larger American amps have, but it hits back with a speed and sheer energy that gives it a more immediately upfront and lifelike presentation. And this energy gives another welcome boost with music material. Fed the multichannel Blu-ray of Pink Floyd's *The Endless River*, the NADs present the wide and lush prog rock performances with tremendous room-filling scale, but also a speed and nimbleness that is often lacking in powerful AV products. If anything, the M17 and M27 are even more impressive in stereo than they are with movies. With the M17 taking a digital signal from a Naim ND5XS streamer, the resulting performance is something that I could happily live with from here to eternity. This combi has the timing and rhythmic ability that makes music an event.

In fact, making media an event is a strapline that suits the Masters Series down to the ground. Watching the opening episode of *Fortitude* (Sky Atlantic) was genuinely cinematic, and I found that even mundane broadcast material was injected with a sense of purpose and excitement. Even at lower levels those impressive dynamics ensure that soundtracks have a reasonable space between loud and quiet passages.

So if you can afford the Masters Series, you are going to be treated to hardware that looks good, is superlatively built and delivers a sonic performance that is unfailingly brilliant, be it with Blu-ray, broadcast or music. Badge-hunters may need convincing, but I don't ■

SPECIFICATIONS

M17 (PROCESSOR)

DOLBY ATMOS: No (but possible upgrade in future)

DTS: X: No (but possible upgrade in future)

THX: No

MULTICHANNEL INPUT: No

MULTIROOM: Yes. Three additional zones

AV INPUTS: 8 x digital audio (4 x optical and 4 x coaxial); 3 x composite video

HDMI: 6 x inputs; 2 x outputs (v1.4)

VIDEO UPSCALING: Yes. To 1080p

COMPONENT VIDEO: 3 inputs; 1 x output

DIMENSIONS: 435(w) x 156(h) x 386(d)mm

WEIGHT: 10.9kg

ALSO FEATURES: Modular Design Construction (MDC) with future HDMI/ HDCP 2.2 upgrade (free); Audyssey MultEQ setup; Audyssey Dynamic EQ; stereo-to-surround EARS (Enhanced Ambient Recovery System); NAD control app; Ethernet; 3 x 12V trigger outputs; 4 x IR outputs; RS232; choice of XLR and phono outputs; full-colour touchscreen

M27 (POWER AMP)

POWER OUTPUT (CLAIMED): 7 x 180W (all channels driven)

CONNECTIONS: 1 x XLR and 1 x phono input per channel

DIMENSIONS: 435(w) x 156(h) x 380(d)mm

WEIGHT: 14.1kg

ALSO FEATURES: nCore amplifier technology; NAD PowerDrive and SoftClipping; 0.5W standby power rating

HCC VERDICT



NAD M17/M27

→ £4,500/£3,500 → nadelectronics.com
→ Tel: 01732 459555

HIGHS: Exceptional performance across all media; stunning build; easy to set up and run; welcome upgrade potential

LOWS: No Dolby Atmos or HDMI 2.0 support at present; no Wi-Fi; no home networking; not exactly cheap

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

WIN



A CAMBRIDGE AUDIO UNIVERSAL BLU-RAY

OUR COMPETITION THIS issue gives one lucky reader the chance to win Cambridge Audio's fantastic CXU Blu-ray player. Worth £900, it's a high-end universal deck that dazzles with both its performance and features, and earned Best Buy status in our review in *HCC* #251. If you want one in your kit rack, enter before the deadline and good luck!

Master of movies

The CXU is Cambridge Audio's top-flight disc-spinner and offers state-of-the-art connectivity, video processing and audio chops. Dual HDMI outputs allow the player to drive two screens simultaneously (or split audio and video feeds), and there are two HDMI inputs for additional sources. Ethernet and Wi-Fi help the CXU connect to your home network for music and video streaming, while three USB inputs provide another option for playback.

Within the CXU's solid, stylish chassis are five separate

Wolfson WM8740 DACs – the same used in much of the brand's CX range of audiophile components. These combine with proprietary ATF (Adaptive Time Filtering) upsampling (to 24-bit/192kHz) and jitter reduction to create a premium audio performance. And for video, the CXU offers upscaling to 4K and integrates Darbee Visual Presence, a powerful and flexible tool that offers real-time video processing to improve image depth and 'pop'.

In action this high-end deck is blessed with slick usability and gets the best out of all your media, be it fresh Blu-rays or much-loved DVDs, DVD-Audio and SACD platters, or your hi-res music collection. Image quality is sumptuous, with clean fine detail, velvety gradations and no intrusive noise or artefacts. And it shines with music, oozing clarity and precise soundstaging.

So Cambridge Audio's CXU is a welcome addition to any AV system. What are you waiting for? ■

For more info on Cambridge Audio's CXU player and other AV delights visit cambridgeaudio.com





'This high-end deck gets the best out of all your media, from Blu-rays to hi-res music'

CXU PLAYER

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£900!**
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disc-spinner up
for grabs

Be in with a chance of winning a Cambridge Audio CXU by answering the following film-related question:

Q: Which actor starred as He-Man in 1987's *Masters of the Universe* movie?

- A)** Hulk Hogan
- B)** Arnold Schwarzenegger
- C)** Dolph Lundgren

HOW TO ENTER:

Simply email your answer (either A, B or C) to competitions@homecinemachoice.com with the subject line 'Cambridge'. You must include your name, address and contact telephone number.

The closing date for this competition is January 25, 2015. Please read the terms and conditions (below) before sending in your entry.



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1. The first entry drawn at random will win the prize. **2.** Only one entry per person/household; multiple entries will be discarded. **3.** Entrants from the UK only. **4.** Employees of MyTimeMedia Ltd and companies supplying competition prizes are not eligible to enter this competition. **5.** Please ensure your personal details are correct, as they will be used to contact you if you win. **6.** No alternatives, cash or otherwise, will be offered to the winner as prizes. **7.** The editor's decision is final. **8.** Comp winners' info available upon request. **9.** The closing date for entries is January 25, 2016.



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DIGITAL COPY

The launch of Ultra HD Blu-ray is getting nearer and first-wave titles have been announced.

Mark Craven wonders whether the studios are approaching the format in the right way

ABOUT A YEAR ago [HCC #241] we compiled a list of 'Ten Things We Want From 4K Blu-ray.' One was a name that made sense, which we got – Ultra HD Blu-ray is a sensible moniker. Another was 4K titles we actually wanted to buy. 'Early take-up of 4K Blu-ray will rest almost solely on the launch catalogue,' we said. 'A well-chosen selection is certain to warm a collector's cockles quickly; token twaddle will have the opposite effect.' So are we to get those must-have titles? It seems not.

Back in September, 20th Century Fox became the first label to confirm its initial Ultra HD Blu-ray slate. The discs, set to arrive in the Spring, will be *Exodus: Gods and Kings*, *Kingsman: The Secret Service*, *Fantastic Four*, *X-Men: Days of Future Past*, *Life of Pi*, *The Maze Runner* and *Wild*.

This announcement has more recently been followed by news that Sony Pictures has lined up *The Amazing Spider-Man 2*, *Salt*, *Hancock*, *Chappie*, *Pineapple Express* and *The Smurfs 2*.

Now, I'm not going to argue the merits of all of these films individually. Suffice to say there are a couple of tasty treats in this baker's dozen, but much of the batch is unappetising. I am, for instance, stunned that anyone at Sony considers *The Smurfs 2* to be amongst its crown jewels. This, after all, is the company that has 4K masters of *Taxi Driver*, *Ghostbusters* and *Lawrence of Arabia* sitting in its vault. Fox, meanwhile, might have considered coming to market with *Star Wars* and *Alien* rather than *Fantastic Four*.

Is it just me?

Of course, more discs will follow and other studios will get involved. Yet these software announcements hardly set the pulse racing. Or do they? Perhaps it's me. Perhaps my idea of what

Ultra HD Blu-ray is all about, and what the studios think, isn't the same.

As we drive deep into the 21st Century, I'd begun to assume that quality physical media had become the preserve of collectors and enthusiasts. **Streaming/download platforms have grown massive on the habits of casual viewers content to watch in standard-def on a variety of screen sizes.** And DVD carries on catering to these buyers, with budget single-disc titles stacked up in petrol stations. Blu-ray, while a decent seller, hasn't managed to become mass-market. Ultra HD Blu-ray, which requires a new player and a new screen, won't get anywhere close for a good while. If at all.

I'd therefore foolishly assumed that dedicated AV and film enthusiasts would be the new format's target audience. And – I'm open to people telling me otherwise – *The Smurfs 2* and *The Maze Runner* aren't the kind of movies said enthusiasts want to watch. Sure, we may get around to giving them a spin at some point, but there's plenty of other stuff, including old favourites, that we want to enjoy first.

The announced titles seem to me to be an indication that the studios believe UHD Blu-ray is a mass-market proposition. Or have their fingers crossed that it will be.

It would be great if they were proved right and I could be denounced as a cynical old hack with his head in the 1990s. I will make no prediction. But I will say that the most galling thing is that I know you – the die-hard home cinema heads that have been waiting for UHD Blu-ray for ages – will go out and buy a copy *The Smurfs 2* just because it's available. And so will I. And I haven't even seen *The Smurfs 1* ■

*Are you planning to rush out to buy Ultra HD Blu-ray?
Let us know: email letters@homecinemachoice.com*

Mark Craven's
list of movies
he'd like to see in
the first wave of
UHD Blu-rays
begins and ends
with *Jaws*. And
has *Jaws* in the
middle too





FILM FANATIC

From incredible indie labels to Atmos-powered blockbusters, **Anton van Beek** reflects on how 2015 has been a great year for Blu-ray collectors...

WITH THIS ISSUE of *Home Cinema Choice* being devoted to celebrating the very best AV gear and Blu-rays of 2015, it seems apt to use this space to look back at the highs and lows I've experienced in the last 12 months as a self-styled 'film fanatic'.

Firstly, the Blu-ray market in the UK has had another buoyant year, despite the constant grumblings about physical media being dead. And **once again, the most exciting developments in Blu have come from our independent labels**. While some Hollywood studios are clearly starting to favour digital distribution services and are beginning to scale back on Blu-ray production (especially when it comes to back catalogue titles), home-grown indies like 88 Films, Arrow Video/Academy, Eureka's The Masters of Cinema Series, the BFI and recent arrival Signal One Entertainment continue to pick up the slack. Each of them is investing in new restorations and/or creating extensive bonus features for films that US majors would no doubt claim have no real market value and would happily leave languishing in their archives.

It remains a shame, though, that more UK arms of Hollywood studios are apparently unwilling to open their vast vaults to these smaller labels – even more so when they clearly have no interest in doing anything with many of their titles and their US partners have already proved to be amenable to the idea of sub-licensing content. I remain hopeful that there may be some movement on this in 2016, but I won't be holding my breath in anticipation.

Contemporary world cinema also continues to be well represented on Blu-ray on these shores, with the likes of Curzon Artificial Eye, StudioCanal and Third Window Films all doing a commendable job of supporting the format. Meanwhile, the recent

announcement from acclaimed DVD label Second Run confirming that it will be releasing its first BD in early 2016 bodes well for this sector.

The good news in 2015 wasn't all confined to arty-farty stuff. It's also been a cracking year for blockbusters. *Mad Max: Fury Road*, *San Andreas*, *Kingsman: The Secret Service*, *Fast & Furious 7*, *Interstellar*, *Mission: Impossible – Rogue Nation* and *Ant-Man* have delivered the sort of popcorn-munching thrills and spills that guarantee a great night in. Unless something goes wrong with the disc's audio mix, that is. Yes, I'm looking at you, *Avengers: Age of Ultron*.

Personal highs

As for my personal home cinema highs, I find it difficult not to single out *Jurassic World*. Yes, I am aware it's really just more of the same kids-in-peril capers and that its gender politics are almost as prehistoric as its cloned creatures, but there's something about it that awakens the 12-year-old film fan inside me in a way that neither of the previous sequels ever did.

Perhaps the biggest surprise of the year has been my unexpected conversion into a cheerleader for Dolby Atmos. I was initially dismissive of the whole idea, not least because it involved rejigging my system, but actually experiencing what Atmos can deliver in a home environment has made me a convert to the cause – and woe betide any movie that had an Atmos mix in cinemas but doesn't sport one on Blu-ray. Oh. That'll be *Age of Ultron* again.

Overall, 2015 has been a bit of a corker. The only thing that could spoil it would be a rubbish *Star Wars* film. But that's just not possible, is it? ■

*What were your home cinema high points of the past year?
Let us know: email letters@homecinemachoice.com*

Anton van Beek enjoyed *Jurassic World* so much that he keeps trying to re-enact Chris Pratt's raptor training scenes with some of his neighbours' cats



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PICTURE THIS

Video calibrator **Vincent Teoh** reveals that even affordable flatscreens can carry the tools necessary to make objective image-quality adjustments – and names his favourite brand

PROBABLY THE MOST common reason owners balk at getting a TV calibrated is the price of the display itself. After all, when a screen costs you £500, why spend half that amount again on a professional tune-up? Surely even the world's best calibrator couldn't possibly extract an improvement in picture quality from a budget set?

Well, it actually depends on the amount (and effectiveness) of picture-affecting controls available on said display. As calibration to a video standard that's used within the film and broadcast industry gains more recognition among buyers, TV makers have started putting more calibration controls in the user menu. However, different brands offer different controls, and some are better than others.

All the tools needed

Among the TVs I frequently tweak, I most enjoy working on ones from Panasonic. The Japanese manufacturer usually provides a comprehensive suite of controls from its midrange 6 series of Viera televisions and up, which includes two- and ten-point white balance, 10-point gamma and a tri-axis colour management system (i.e. you can adjust the hue, saturation and luminance of three primary and likely three secondary colours). These controls work very well – you can make fairly large adjustments without incurring artefacts, although on plasmas I tend to avoid certain parameters to minimise the risk of introducing undue black level contamination or dynamic false contouring. Furthermore, the Copy Adjustment feature on Panasonic TVs lets me map all the settings across specific presets and connection ports. Handy.

On higher-end Panasonic screens, the icing on the calibration cake is Direct Display Control. This allows you to make adjustments on the TV directly

from a laptop using compatible software, which means no fumbling with the remote in the dark. Not needing to summon the user menu on screen also helps with consistency of measurements.

Samsung comes in a close second among TV makers whose displays I like working with. Two- and ten-point white balance controls can usually be found on Samsung's Series 6 and up, although unlike other brands, the Korean company's colour management system (CMS) is based on an RGB (red, green, blue) system instead of HSL (hue, saturation, luminance). While an RGB-based CMS is less intuitive, it's technically more direct since an HSL-based CMS would be mixing the red, green and blue colours behind the scenes anyway.

Samsung is also the only TV brand to provide a Flesh Tone control on its displays, which gives me another opportunity to dial in skin tones – arguably the most important memory colour – using objective measurements.

Always keen to one-up Samsung, LG has actually implemented 20-point white balance controls even on its entry-level models, though they only align properly with the signal being adjusted if contrast and brightness are set to specific values. Care also needs to be taken when calibrating LG's CMS, as extreme adjustments can do more harm than good on certain models.

Sony TVs (even flagship models) don't ship with an onboard CMS, but colours generally fall into place quite accurately once greyscale is calibrated.

The bottom line is that some branded budget TVs actually offer sufficient controls to let calibrators do their work – your money-saving purchase may surprise you! ■

*Do you stick to your TV's presets, or make adjustments?
Let us know: email letters@homecinemachoice.com*

Vincent Teoh has worked as a professional video calibrator for seven years and can spot a dead pixel on a TV from the other side of the street



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Feedback

Got an axe to grind? Need to comment on current technology? Want to share your knowledge with our readers? **HCC** is here to help

When fast isn't fast enough

As a BT Infinity subscriber and the owner of a Samsung 4K TV I was keen to subscribe to the UHD TV service launched by BT Sport. It is not to be, however, because apparently BT Infinity and a compatible TV are not the only requirements to receive the service – it appears to be necessary for BT to upgrade the local exchange as well. Either there is a technical reason for this in terms of BT transmission hardware, or there is a view within BT that a 30Mbps broadband connection is insufficient to deliver the BT sport transmission to an adequate standard. I find the latter hard to believe (my Netflix UHD TV service works fine).



BT 4K: a real speed demon

A cynic might say that BT is silent on this point because they want to encourage people to sign up to Infinity in the hope of receiving the UHD TV service, irrespective of whether they can deliver it or not. Roy Powell, via email

Mark Craven replies: There certainly are download speed requirements for BT's 4K service

that go beyond 'get Infinity and you'll be okay'. Rather, a line speed of 44Mbps is needed. We asked BT for exact clarification.

'BT TV Ultra HD is available to BT Infinity 1 and 2 customers. The service requires 44Mbps, which ensures a high-quality TV viewing experience and concurrent internet usage. Infinity 1 customers will be able

to order BT TV Ultra HD if their line is technically capable of supporting 44Mb. Broadband usage, however, will still be subject to the 40Mbps limit.'

Will an OLED TV beat my PDP?

Hi, I am a subscriber, and have seen, elsewhere, a review of the LG 55EF950V. I currently have a Panasonic 42in plasma,

★ STAR LETTER...

AV industry will become a victim of its own success

Firstly, I'd like to say thanks for an interesting monthly read. I've been reading *HCC* for a few years now and contribute on a regular basis. This time it's about the way things are moving forward in the AV world. I can remember all the hype about 3D and how it was going to change the way we watch our screens. I said at the time that it was a fad that wouldn't last. Looks like I was right. But now we have UHD, HDR and Dolby Atmos.

In a previous letter to your good selves I mentioned the fact that UHD would soon be replaced with 8K, and now find that NHK in Japan are trying 8K broadcasts. So how long before those 4K TVs are consigned to the basement? Sooner than you think, because already we have HDR to worry about. I feel for all those people that rushed out to

get their 4K tellies to find that not only was 4K BD still in the pipe-line, but the spec now includes HDR which effectively means that those early purchasers may regret buying a TV that went out of date before it really came into its own.

The same could be said of Dolby Atmos. As we know, DTS:X is due to arrive soon, and not all receivers are going to be made compatible.

I think the current state of affairs is in total disarray, and that some of the bigger companies should start talking to each other about co-ordinating new tech. After all, buying a TV with nothing to watch only to find that when

the media does arrive it could make your TV almost obsolete is doing more harm to home cinema than so-called soundbars (of which I am not a fan).

It seems to be such a shame that technology is moving too

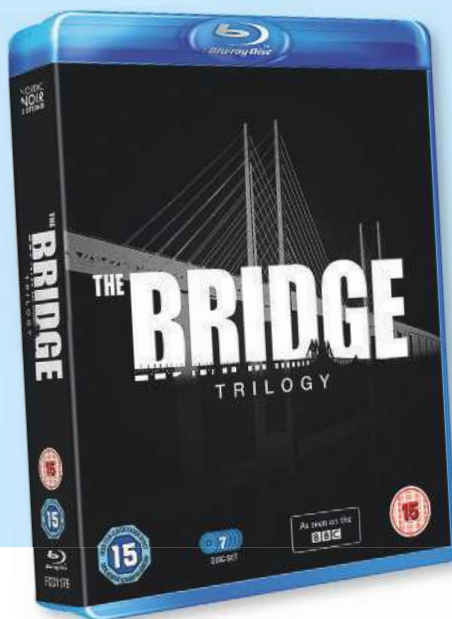
fast for the consumer to keep up. Hopefully future developments will be made in a more considered approach.

In the end, the industry will become a victim of its own success as consumers will start thinking it's not worth investing because as soon as you buy it, it's out-of-date!

Steve Old, via email

Mark Craven replies: You're not the first reader to raise these issues, Steve, and probably won't be the last. As I've said previously, the slow roll-out of 4K content has wound up plenty of AV-Holics, especially those with 4K displays.

A few points, though: firstly, HDR-toting 4K Blu-rays will still play on a non-HDR 4K TV. They'll just spool out as SDR in 4K resolution. So the format



approximately five years old, (TH-42PZ85B). These televisions are power-hungry, and I have determined that I can save approximately £1,200 over five years in electricity costs!

The cost of a new television with electricity cost savings, 4K etc., is therefore appealing. As such, what is the expected lifespan of an OLED TV, and will there be a degradation in picture quality as time progresses? Currys seem to be offering five-year warranty as standard.

Can one assume that the picture quality of an OLED today exceeds the picture quality of a five-year-old plasma? Has there been any tests in ensuring that HDMI v1.3 compliant equipment will work with the v2.0 HDMI?

Lastly, are the current 4K OLED LG televisions compatible with the new 4K Blu-ray standard, or should I wait?

Richard, via email

Vincent Teoh replies: Because OLED TV is a relatively new display technology, there has been no concrete long-term data on its lifespan. However, LG (through its own stress testing) has specified 30,000 hours

isn't going to make UHD TVs totally obsolete. Secondly, sensibly-priced 8K TVs are some years away – there probably isn't any point worrying about those at the moment.

Thirdly, we're near the end of this AV development phase. UHD HDR is gonna be great, isn't it? It's time to get excited!

Lastly: what have you got against soundbars!?

Star letter-writer Steve wins *The Bridge Trilogy* on Blu-ray. Collecting all three seasons of the superb Scandinavian crime drama, *The Bridge Trilogy* is available to buy on Blu-ray and DVD from December 21 courtesy of Arrow Films. *The Bridge: The Complete Season Three* is also available to buy on Blu-ray and DVD on the same day.



before its WRGB OLED panel's brightness will be halved. In other words, assuming eight-hour use a day, it will take more than 10 years before an OLED TV's light output is degraded by 50 per cent, and even then it should still produce a watchable picture. Running your OLED TV sensibly by not driving it at maximum cell light and contrast settings will extend its lifespan, too. In my opinion, the lifespan of LG's OLED TV is not an issue, and in any case you're covered by the provided five-year warranty.

The picture quality of today's OLED is truly staggering, and should comfortably exceed that of your five-year-old plasma.

HDMI specifications have been designed to be backwards compatible, so your HDMI v1.3 equipment should work fine on an HDMI 2.0 OLED TV.

With Ultra HD Blu-ray still to launch and the exact specs of HDR (High Dynamic Range) content not standardised at this time of writing, then you perhaps may want to wait. However, if you need to get a TV today, the LG 55EF950V is no less futureproofed than other 4K TVs available to buy on the UK market currently. We'll be looking at the 65in model in our next issue.

3D will survive

Back in 1971 – the year I left school – I was lucky enough to be given

an apprenticeship in TV and radio engineering. I can remember helping my senior engineer set up an enormous 26in Bush colour TV and thinking how lucky some of our customers were to afford such a luxury at £600 a pop. Back then people were watching *Sale of The Century* on a black-and-white manual-dial Phillips TV. Not many people were convinced that colour was the future; in fact, they thought colour was expensive, unnecessary and would fade away in a couple of years.

Then along came Sony with its beautifully-made 12in Trinitron. It made people rethink about colour – the price was only £350 and the picture was simply years head of any competition. Later on I saw a massive shift from large to more medium-sized 22in TVs and prices holding for nearly 20 years, and those same people saying that colour would never catch on having not one but two or even three such TVs in their homes.

Reading some of the recent comments from readers and journalists criticising 3D reminds me of all those criticisms over colour 40 years ago – that it was a fad and would never catch on. Although it needs getting used to, 3D is a natural progression, a wonderful addition to this industry, and must and will survive because people's views change as technology moves forward.

Stephen Michael Clark, via email

Studios won't dump 3D

Regarding Morris's letter [*HCC* #254], it's obvious that 3D won't go mainstream, despite James Cameron wishing otherwise. But it should be available for purchase on 3D Blu-ray if it's been run in theatres in 3D. And I don't mind paying five quid extra for a 3D disc, especially when the 2D version is included.

Also, I don't think we should be worried that 3D will not be included in the Ultra HD Blu-ray specification. I'm sure that studios are going to be reasonable and they will include Full HD 3D Blu-ray as well 2D Blu-ray with 4K titles – with a higher price of course. Long live 3D!

Romualds, via email

Archive appreciation

I enjoyed Anton Van Beek's *Film Fanatic* column in *HCC* #254. I am a fan of 3D, always have been. Like Anton I hope it continues because there is so much back-catalogue stuff to collect.

One great source of 3D I have found is www.3dfilmarchive.com. They have released (or helped restore) several long-forgotten 3D films under other labels – *Creature from the Black Lagoon* being one of them. They were instrumental in the releases of *The Bubble*, *Inferno* and *Dragonfly Squadron*, and recently released a Blu-ray called *3D Rarities* via the Flicker Alley label. Needless to say I have all of these. *The Mask* is also

getting a release [*it's out now – Ed*] and I believe *Hondo*, the John Wayne 3D film, is also on the way. So, you see, even if Hollywood gives up on 3D there are other sources still around.

The last time I wrote I mentioned 3D demo discs and the fact that they are better than the 3D films. I think the same is true with object-based sound. I have all the Atmos gear and films and my best disc is the Atmos demo disc! Let's hope DTS:X and Auro-3D have more thrills in store, or Atmos gives the height plane more to do. I have heard better soundtracks on DTS-HD discs than some of the Atmos ones, *Jurassic Park* being one of them. *Fred Elliot, via email*

Anton van Beek replies: Thanks Steve, Romaulds and Fred – it seems the recent discussions of 3D in HCC have touched a nerve! Your letters clearly show that there are still home cinema fans with a passion for stereoscopic immersion. Does anyone want to

write in and argue against 3D?

Blu-ray audio discs rock!

Watcha guys. I've just been reading Steve May's great article in HCC #253 [*AV Avenger*] about Blu-ray audio discs. I found out about these a couple of years ago by seeing an advert for The Rolling Stones album *Grrr* on Pure Audio Blu-ray. As it was the first disc available it was a must-own and I wanted to find out what the big deal was (also, if people don't know, this is the three-CD set on one convenient platter). For sound quality I found it varies and is stereo only – no surround sound.

As for other releases give Pink Floyd's *The Endless River* and David Gilmour's *Rattle That Lock* a try. Both boxsets contain loads of bits and pieces and both discs



Go ape with The Rolling Stones on Pure Audio Blu-ray

have 5.1 Dolby Digital/DTS and sound fantastic.

Now for my favourite album of all time that has had a Blu-ray release. If you can: beg, steal, borrow or buy

a copy of Elton John's *Goodbye Yellow Brick Road*. You are in for the treat of your life. From the opening 11-minute track *Funeral For a Friend/Love Lies Bleeding* to the fantastic harmonies of *Harmony*, this album always puts a big smile on my face. It also contains both 5.1 Dolby and DTS soundtracks and again the double album has been put onto one disc. It's a must own just to show how good multichannel music is.

Lee Regan, via email

Mark Craven replies: I've had some wondrous moments listening to multichannel music – Queen's *Bohemian Rhapsody* in 5.1 springs to mind – but I'll admit I'm more likely to be playing an album on my system while I'm actually wandering all over the house rather than sitting down and sampling the soundfield delights.

So maybe I should set some time aside with your recommended Elton John disc. And if anyone else has any other tips, I'm all ears! ■

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Win! Great Blu-rays up for grabs

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British classics

StudioCanal is bringing two more classic British films to Blu-ray with *The Captive Heart* (1946) and *The Angry Silence* (1960) joining its 'Vintage Classics' line-up on January 4. To celebrate,

StudioCanal has given us three sets of the two Blu-rays to give away!

Question:

The Angry Silence stars the brother of which famous naturalist?

Answer:

A) David Bellamy B) David Attenborough C) Chris Packham

Email your answer with '*Angry Silence*' as the subject heading – and don't forget to include your postal address!



The Last Kingdom

Following a successful run on BBC2, the spectacular historical drama *The Last Kingdom* hit Blu-ray™ and DVD earlier this month, courtesy of Universal Pictures (UK). If you fancy

winning one of five *The Last Kingdom* Blu-rays, simply answer this brain-teaser correctly...

Question:

The Last Kingdom adapts a series of historical novels by which author?

Answer:

A) Bernard Cornwell B) Terry Pratchett C) Hilary Mantel

Email your answer with '*Last Kingdom*' as the subject heading – and don't forget to include your postal address!



Sinister 2

Long Winter nights are the perfect time to settle down with a good fright film. Already available on Digital HD, horror sequel *Sinister 2* crawls onto Blu-ray and DVD on December 28 –

and thanks to Entertainment One we've got five copies of the Blu-ray up for grabs!

Question:

Sinister co-creator Scott Derrickson is directing which upcoming superhero film?

Answer:

A) Doctor Strange B) Thor: Ragnarok C) Captain America: Civil War

Email your answer with '*Sinister 2*' as the subject heading – and don't forget to include your postal address!

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PLAYBACK

→ **SOFTWARE HIGHLIGHTS** **ANT-MAN 3D** Marvel's latest proves that good things really do come in small packages **THE MAN FROM U.N.C.L.E.** Guy Ritchie brings '60s series to the bigscreen **SPY** Melissa McCarthy's new comedy has a hi-def licence to thrill **FEAR THE WALKING DEAD** First season of the zombie spin-off shuffles onto BD **TED 2** Trash-talking teddy bear returns **AND MUCH MORE!**



Pac attack

Pixels in 3D → Sony Pictures → All-region BD

Classic videogame characters go on the rampage in this stereoscopic sci-fi-comedy. Turn to p118 for our Blu-ray review.

HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

'How come that other guy gets an Aston Martin DB5 and we're stuck with this?'



An old-fashioned blockbuster

Guy Ritchie warms up the Cold War with his deliberately retro pastiche of '60s spy movies

→ THE MAN FROM U.N.C.L.E.

Having already reworked Conan Doyle's master detective for the bigscreen, director Guy Ritchie now turns his attention to the iconic figure of the gentleman spy with this cinematic 'reimagining' of the classic TV series *The Man from U.N.C.L.E.*

When a couple of wealthy Nazi-sympathisers set about building their own nuclear weapon, suave thief-turned-CIA agent Napoleon Solo (Henry Cavill) and KGB operative Illya Kuryakin (Arnie Hammer) must put aside their rivalry and work together to stop to the plan. Joining them on their mission is Gaby Teller (Alicia Vikander, below), the daughter of the German scientist building the weapon.

More of a prequel than a straight adaptation of the original series (it ends – spoiler alert! – with Solo and Kuryakin being reassigned to U.N.C.L.E.), Ritchie's film is a lightweight genre pastiche that happily coasts along on its gorgeous retro styling. It also helps that the cast have such terrific chemistry, particularly Cavill and Hammer who spark off one another brilliantly.

The plot is fairly inconsequential stuff, no matter how many double-, triple- or quadruple-crosses the scriptwriters introduce. As Summer blockbusters go, it's a curiously laid-back affair. But even so, we wouldn't be averse to joining this pair of spies on another mission.

Picture: *The Man from U.N.C.L.E.* looks rather spiffy on Blu-ray. While there is a tendency towards teal and orange tinting during the opening sequence and a few scenes after that (which has the knock-on effect of making blacks look more like dark blues), on the whole the colour reproduction is first-rate.

The clarity and sharpness inherent in the platter's AVC 2.40:1 1080p encode also lends the visuals a pleasing sense of depth. Strong image definition also ensures that plenty of subtle textures and details are revealed in close-up shots.

Audio: *The Man from U.N.C.L.E.* sports a Dolby Atmos soundtrack on Blu-ray, but if you have to stick with the core Dolby TrueHD mix then it's arguable that you won't miss out on much.

Outside of a helicopter flyover in Chapter 9 there's little use made of specific effects placement in the Atmos height plane.

The sound designers tend to favour more generalised ambience, such as helping the music swell over you as the final attack on the compound gets under way (Chapter 10).

Thankfully, the rest of the speaker array gets a real workout, with constant use of the surrounds and a rich vein of LFE.

Extras: Bonus features are about as light and frothy as the film itself. All that's on offer are five brief *Making of...* featurettes and four (even shorter) behind-the-scenes vignettes.



HCC VERDICT

The Man from U.N.C.L.E.
→ Warner Bros. → All-region BD
→ £25 approx

WE SAY: This spy flick looks as sharp as one of Napoleon Solo's tailored suits in high-definition

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

Southpaw

Entertainment in Video → Region B BD
£25 approx



An all-too familiar plot stops this boxing drama from being a true title contender, yet credit is due to a bulked-up Jake

Gyllenhaal for a powerhouse performance that drives the film through round after round. And Eiv's Blu-ray release also packs a heck of a punch thanks to its crisply rendered AVC 2.40:1 1080p encode and powerfully immersive DTS-HD MA 5.1 soundtrack. Bonus features consist of a *Making of...* featurette (21 minutes), a Screen Actors Guild Q&A with the cast (19 minutes), a montage of Gyllenhaal's training regime (four minutes) and eight deleted scenes.



Trainwreck

Universal Pictures → All-region BD
£25 approx



Judd Apatow's latest raunchy comedy stars Amy Schumer as a commitment-phobic New York magazine

writer whose life gets turned upside down when she (gasps!) develops actual feelings for Bill Hader's charming sports surgeon Aaron. This funny, edgy and whip-smart (if ultimately surprisingly traditional) rom-com arrives on a well-specified Blu-ray platter that delivers strong 2.40:1 Full HD picture quality and busy DTS-HD MA 5.1 audio. Alongside theatrical and extended cuts, the Blu-ray proffers a commentary, countless deleted/extended scenes, alternate takes and much more.



Ted 2: Extended Edition

Universal Pictures → All-region BD
£25 approx



Following the disappointment of *A Million Ways to Die in the West*, Seth MacFarlane is back to his cheerfully offensive and funny best with this sequel to his 2012 stoner smash.

This time around Ted must fight for his civil rights when the US government blocks his attempt to adopt a child with his human wife, due to his legal status as property rather than a real person. In addition to solid 2.40:1-framed 1080p visuals and surprisingly punchy DTS-HD MA 5.1 sonics, this Blu-ray packs plenty of extras including two cuts of the movie, a chat-track, deleted scenes and numerous behind-the-scenes peeks.



From Feig and McCarthy with love

Comedy duo unite for a boundary-pushing espionage comedy starring an HCC fave

→ SPY

Writer/director Paul Feig teams up for a third time with Melissa McCarthy to deliver another superb rib-tickling comedy. *Spy* aims higher than either *Bridesmaids* or *The Heat* before it though: this is an action comedy that parodies the globe-trotting adventures of the James Bond franchise.

McCarthy leads as Susan Cooper, a CIA support worker who spends her time behind a desk transmitting vital info to super-agent Bradley Fine (Jude Law). When Fine is taken out of action by nuclear terrorist Rayna (Rose Byrne), Cooper volunteers herself for fieldwork, on the basis that Rayna wouldn't recognise her. And before you can say 'action comedy,' she's charging around Europe trying to stop the sale of a nuclear bomb and save the CIA's blushes.

Feig fans will know what to expect from *Spy*. This is full-throttle fun that certainly pushes the boundaries of its 15 rating, courtesy of some unexpected gore/nudity and expected foul-mouthed dialogue. At two hours long (or longer if you opt for the extended version on Fox's Blu-ray) it does drag on occasion, but for much of the time you'll be too busy laughing to care – often when action-oriented thesp turned comedy hero Jason Statham is onscreen in his role as dimwitted agent Rick Ford.

Picture: The Blu-ray's Full HD 2.40:1 encode is bright and colourful – some of Cooper's hideous costumes practically ping off the screen – and impressively detailed. That said, it does on occasion feel a little flat, with some low-light interior sequences lacking pop compared to the sunny locations.



Audio: The DTS-HD MA 7.1 mix is a thoroughbred affair and perhaps better than expected. It's not particularly inventive, but enveloping, clean and loud and brash when it needs to be.

Extras: There are more extra features here than can be written on the back of the BD sleeve – although once you start digging into them many prove to be throwaway fluff, such as *The Many Deaths of Anton*, which turns out to be less than a minute of alternate takes. However, there are plenty of laughs to be found amongst the disc's copious gag-reels, line goofs, extended scenes and dialogue improvs.

How Spy Was Made is a (slightly) more serious multipart *Making of...* feature that looks into stuntwork and casting and McCarthy and Feig's collaboration. Best of all, though, is the commentary track, where the director is joined by his producer and director of photography. This a dead-air free zone packed with info.



HCC VERDICT

Spy
→ 20th Century Fox → Region A/B BD
→ £25 approx
WE SAY: A cracking action-comedy treated with respect on this extras-packed Blu-ray

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

Honey, they shrunk the superhero!

It may be about Marvel's tiniest action hero, but this quick-witted blockbuster is packed with big ideas



Paul Rudd's Ant-Man is set to appear in next year's *Captain America: Civil War* before getting his own sequel in 2018

DISC
OF THE
MONTH

→ ANT-MAN 3D

Earlier in the year, superhero sequel *Avengers: Age of Ultron* lit up the box office but failed to capture the energy and thrills of the original. 2015 suddenly looked set to be the year that the cracks started to show in the Marvel Cinematic Universe. After all, what hope was there for the studio's next outing; a film about a hero whose powers consist of shrinking and talking to ants? Let alone one that had already been tarnished by the acrimonious departure of fan-favourite filmmaker Edgar Wright. Could it be that we were looking at Marvel's first major flop?

In a word: no. *Ant-Man* turned out to be one of the most entertaining Marvel movies to date, and is certainly its funniest outside of *Guardians of the Galaxy*.

Okay, so it adheres to the familiar Marvel origin movie template, is saddled with yet another of the studio's underdeveloped villains and the script could have done with another polish (is Scott Lang an accomplished cat burglar or a one-time corporate whistle-blower? What the film shows us and what

it tells us are two different things). But, at the same time it's a smart and enjoyable comic book flick that marries an *Ocean's Eleven*-style heist plot to a deconstruction of the whole superhero genre.

Key to this is director Peyton Reed's playful approach to the material. Macro photography immerses us in traditional superhero action as miniaturised hero and villain knock lumps out of one another, before cutting to wider shots that make these epic battles look like nothing more than child's play (the final showdown even takes place on a *Thomas the Tank Engine* train set...).

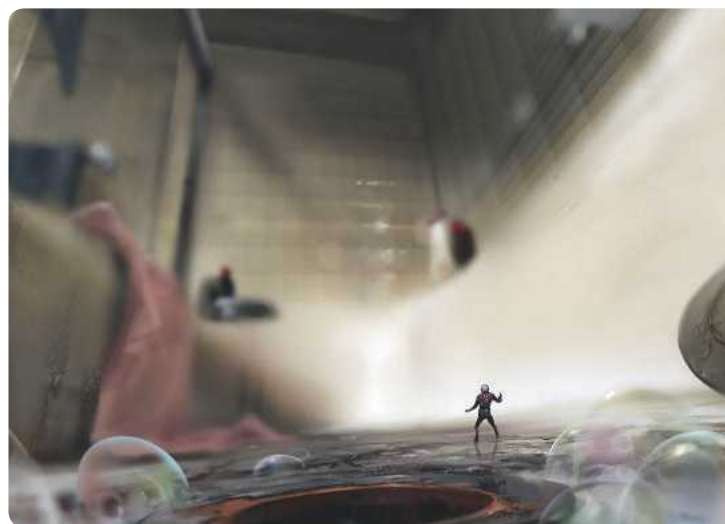
Ant-Man also continues Marvel's impressive track record when it comes to casting. Paul Rudd brings a likeable sense of weariness and self-deprecation to the role of Lang (alongside the obligatory six-pack) and gets plenty of support from Michael Douglas as original Ant-Man Hank Pym and Evangeline Lilly as Pym's smart and tough daughter. Meanwhile, Michael Peña rustles up the biggest laughs as Scott's friend Luis and Corey Stoll brings some much needed manic energy to the villainous role of Darren Cross.



Michael Douglas (right) says he took the role of Hank Pym so he'd finally have a film his kids could get excited about



Taking a bath presents a whole new world of danger for Ant-Man (below)



Picture: According to Peyton Reed in this disc's director's commentary: '*Ant-Man* lends itself just conceptually to 3D – it really does enhance the experience.' After watching this stereoscopic Blu-ray you'll find yourself agreeing.

It wasn't shot natively in 3D, but the conversion here is an extremely effective one – particularly when it comes to the movie's VFX-heavy action scenes. Volumetric depth in the 1.85:1 picture is palpable,

creating a sense of scale that really aids the central shrinking concept.

The 2D AVC presentation (on a second HD disc) offers a modest uptick in fine object detail and colour saturation. However, this is just one of those films that works that bit better in 3D.

Audio: *Ant-Man* hit compatible cinemas with a Dolby Atmos mix; Disney's Blu-ray opts for DTS-HD Master Audio 7.1. Thankfully, unlike *Avengers: Age of*

Ultron's boded Blu-ray track, this is a dynamic, bruising soundmix that should satisfy even the most demanding cinephile.

Scenes such as the tiny Scott's race to escape from a deluge of water in a bath (Chapter 6), his fight with Falcon (Chapter 12) and his flight through the short-circuiting server room (Chapter 13) provide a potent, multilayered soundscape that is a sumptuous accompaniment to the three-dimensional imagery.

It's not all bombast, though. Dialogue is exemplary and perfectly balanced in the mix, while music is well defined and delightfully lyrical.

Extras: A fair selection. *Making an Ant-Sized Heist: A How-to Guide* (15 minutes) offers a whistle-stop tour of the film's production. *Let's Go to the Macroverse* (eight minutes) looks at the camera techniques and VFX used to bring the shrinking sequences to life. *WHIH Newsfront* (nine minutes) consist of four in-universe news reports. Peyton Reed and Paul Rudd also provide a feature-length audio commentary.

Rounding things out are eight deleted/extended scenes (with optional commentary) and a gag reel.



HCC VERDICT

Ant-Man 3D

→ Walt Disney → All-region BD
→ £28 approx

WE SAY: Top-tier picture and sound ensure that Marvel's smallest hero is a massive hit on Blu-ray

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

ARCADE ACTION

Bigscreen home entertainment isn't just about movies anymore. Check out this videogame vying for time on your home cinema system...



Star Wars: Battlefront

Electronic Arts → Xbox One/PS4/PC → £55 Approx



There have been plenty of *Star Wars* videogames over the last three decades or so, but few transport you into the battlegrounds and major set-pieces of the movie series so successfully as *Star Wars Battlefront*. Graphically, it doesn't just invoke the spirit of *Star Wars*, it is *Star Wars*.

Developer Dice has crafted astonishing scenery. Hoth, Tatooine, Endor and Sullust are stunning in their fidelity and attention to detail.

In fact, this is quite possibly the best-looking game on PlayStation 4 and Xbox One yet. It runs in 900p on PS4, 720p on Xbox One, both at 60 frames per second, and while that might seem a swizz in resolution terms, the frame rate makes up for it with smooth, film-like motion. The PC version is the AV king if you have a gaming rig powerful enough, as it's capable of running at 2160p although you will have to drop some of the settings to do so.

All platforms carry the superb soundtrack and audio effects. The console versions are capable of 7.1 output and it sounds spectacular through a cinema setup. A Dolby Atmos mix is rumoured for PC, but we're yet to hear that working.

So that's the good news. The caveat to the AV wonders is the gameplay itself. There's no doubt that the third-person, online pew-pew action is enormous fun – partly thanks to the treat on the eyes and ear – but only in short bursts. As a massive skirmish title it is perhaps too simplified for the type of gamer who is willing to invest hours in crafting tactics and strategies with online friends in order to dispatch foes. Instead, in battles – on foot or in the air in a craft such as an X-Wing – you are part of a team but it still feels like you have your own agenda.

Regardless of the enormous settings, battles are stripped back and never feel as meaty as a *Call of Duty: Black Ops 3* bout, for example. Single- and co-op missions fare no better, being fun for a short while before becoming ultimately unfulfilling. For casual gamers, that won't matter greatly. This is easy to pick up and easy to do well in. Just don't expect to enjoy marathon sessions at a time.



This is England '90

ITV Studios → Region B BD
£27 approx



Comedy and tragedy are the order of the day once again as Shane Meadows pays a final visit to the characters he created for his 2006 film *This is England*. While not as strong

as the two earlier series, this final outing is still superior TV drama – and if this really is the end then the gang will be sorely missed. While the four episodes look very good on this 1080i50 Blu-ray, LPCM 2.0 audio is a little underwhelming. Extras take the form of four deleted sequences.



Better Call Saul: Season One

Sony Pictures → All-region BD
£35 approx



It's easy to understand why a TV network might want a spin-off from a hit series, but they are fiendishly tricky things to get right (see opposite).

Thankfully, this spin-off from

Breaking Bad about dodgy lawyer Saul Goodman/Jimmy McGill (Bob Odenkirk) holds attention even when divorced from the fan-pleasing nods to its parent series. The fact that the 10 episodes that make up this debut season look superb in HD and are accompanied by DTS-HD MA 5.1 mixes and a multitude of extras is the icing on a delicious televisual cake.



Vikings: The Complete Third Season

20th Century Fox → All-region BD
£35 approx



The saga of legendary Norse king Ragnar Lothbrok (Travis Fimmel) gets more and more spectacular with each passing year, and in this third season builds up to a thrilling assault

on Paris. However, where *Vikings* excels is as a character study, and this season is the show's biggest emotional roller-coaster to date. Fox's three-disc Blu-ray release offers intricately detailed 1080p encodes, pervasive DTS-HD MA 5.1 soundtracks and a collection of interesting bonus bits.





'Quick, we can't let anything even remotely exciting happen!'

Dead and loving it? Not this time

AMC's zombie spin-off struggles to carve itself a fresh niche in this initial six-part outing

→ FEAR THE WALKING DEAD: THE COMPLETE FIRST SEASON

With each season of zombie series *The Walking Dead* opening to monster ratings for cable channel AMC, it's no surprise that the broadcaster fancied another bite of the decaying cherry. Which is why we now have *Fear the Walking Dead*, a six-episode prequel series that dials back the clock to show the onset of the zombie apocalypse through the prism of a dysfunctional Los Angeles family.

Fear the Walking Dead set a new ratings record for a US cable series premiere and scored the largest day-and-date release for a US series across more than 125 territories. Yet this debut season falls short of its acclaimed parent show.

There are fine actors among the cast, including Kim Dickens and Ruben Blades, but the central family are a patience-testing collection of characters that leaves you rooting for the zombies. Or it would, if they had any real presence in the show. Ironically, for a series called *Fear the Walking Dead*, the undead barely factor as a genuine threat.

Just as problematic is the way in which the show handles its central concept – the initial zombie outbreak. After an understandable slow-burn start, it's as if the showrunners realised that they just didn't have the budget to show the downfall of one of America's

biggest city and have it happen off-screen between the end of one episode and the start of the next. Zombie mayhem fans will want to dig up their *World War Z* Blu-ray instead.

The ensuing storyline dealing with the military response sees *Fear the Walking Dead* find a groove of its own. Yet with this wrapped up in the space of three episodes it appears to leave viewers facing a future that will be little more than a pale rehash of *The Walking Dead*.

Picture: One obvious difference between *The Walking Dead* and *Fear the Walking Dead* is that the former is shot on 16mm and this new series is an all-digital affair. As such, the six AVC 1.78:1 1080p encodes on this two-disc set are far glossier and sharper, with a richer colour palette. It's apocalyptic eye-candy

Audio: The DTS-HD MA 5.1 mixes are low-key affairs that favour dialogue and ambience over bombast. Things do pick up during the assault on the military compound in the final episode, when gunfire and screams fill the soundstage.

Extras: All this debut season of *Fear the Walking Dead* musters in the way of extras is a pair of generic promo videos: *A Look at the Series* (four minutes) and *Inside the Characters* (three minutes). Couldn't we also have had the 16-part *Fear the Walking Dead: Flight 462* web series? Apparently not.



A 15-episode second season has been commissioned by AMC for 2016



HCC VERDICT

Fear the Walking Dead: The Complete First Season

→ Entertainment One → Region B BD → £30 approx

WE SAY: A disappointing debut for this eagerly-anticipated TV spin-off

Movie ★★☆☆☆

Picture ★★★★★

Audio ★★★★★

Extras ★☆☆☆☆

Overall ★★☆☆☆





Game over for Adam Sandler?

Misconceived action-comedy is only good for sullyng your memories of classic arcade games

→ PIXELS IN 3D



HCC VERDICT

Pixels in 3D

→ Sony Pictures → All-region BD
→ £28 approx

WE SAY: It may look truly sensational (in 2D) and boast the first Auro-3D soundtrack, but *Pixels* still sucks

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

When extraterrestrials misinterpret footage from classic videogames beamed into space in 1982 as a declaration of war, they decide to wipe out all life on Earth using technology based on the likes of *Galaga*, *Centipede* and *Pac-Man*. And with the military hopelessly outclassed, humanity's only hope lies with a trio of former arcade game champions (Adam Sandler, Peter Dinklage and Josh Gad).

Based on Patrick Jean's brilliant two-minute short of the same name that set the internet alight back in 2011, the feature-length *Pixels* simply uses the idea as the backbone for an idiotic *Ghostbusters* knockoff that sees Sandler and chums performing the sort of slapdash idiocy that passes for comedy in every Happy Madison production. Meanwhile, talented actors likes Michelle Monaghan and Jane Krakowski are wasted due to the screenwriters either having no idea how to write meaningful parts for women or no interest in doing so, lest it detract from Sandler's annoying man-child schtick.

And who exactly has *Pixels* been made for? While the 'jokes' may just about keep kids amused, the nostalgia value of *Q*bert* and *Galaga* will surely pass them by completely. Furthermore, anyone old enough to have played those games in their youth will no doubt find the rest of the film insultingly infantile and imbecilic. *Happy Gilmore*, this ain't.

Picture: Of course, a movie as life-sappingly dull as *Pixels* was always bound to look absolutely amazing on Blu-ray. And that's what's happened – at least where the 2D encode is concerned.

Another of Sony's 'Mastered in 4K' presentations, the flat 2.40:1 1080p encode delivers incredibly vibrant colours that explode from the screen. Detailing also astonishes with its intricacy, while blacks are spectacularly deep and inky.

Unfortunately, the 3D encode doesn't hold up quite as well. Outside of a few sequences (Chapter 2's swirling arcade screens, Q*bert poking his nose over the lower black bar when he's first revealed in Chapter 12...) the image lacks significant volume. More damaging still is the impact of the drop in brightness, with colour failing to pop and blacks crushed to the point of eliminating shadow detail.

Audio: The 2D *Pixels* Blu-ray was Sony's first Dolby Atmos release in the US, but this delayed UK outing surprisingly arrived with an Auro-3D track on the 2D disc instead. At the time of writing we weren't in a situation to audition this, so we'll stick to commenting on the DTS-HD Master Audio 5.1 mix: a perfectly well-rendered but not especially exciting affair that only really bursts into life during the movie's trio of major action sequences.

Extras: The 2D disc includes a music video, a stills gallery and eight behind-the-scenes vignettes (including a piece about *Pac-Man* creator Toru Iwatani's cameo in the film). Notably absent is the original *Pixels* short.



Future Shock! The Making of 2000AD

Metrodome → R2 DVD
£13 approx



A must-see for fans of *2000AD* and those with a more general interest in the UK funny book industry, this superior documentary serves up a long-overdue account of 'The Galaxy's Greatest Comic'. Based around interviews with creators who have worked on the title over the past 39 years, Paul Goodwin's rewarding film certainly doesn't pull any punches as it charts *2000AD*'s tumultuous history. The DVD's anamorphic 1.78:1 and DD 2.0 audio are perfectly acceptable given the source material. Also included is a PDF collection of 11 archival comic strips.



Vacation

Warner Bros. → All-region BD
£25 approx



Given the disastrous reception that greeted it in cinemas, you may contemplate giving this reboot/sequel to 1987's *National Lampoon's Vacation* a miss. But in doing so you'd be missing out on one of the year's funniest films; a gross-out treat of rare invention that kept Team HCC laughing out loud from start to finish. Shot digitally, *Vacation* arrives on Blu-ray with a bright and detailed 2.40:1 1080p encode. The accompanying DTS-HD MA 5.1 mix is a lively affair that combines crystal-clear dialogue with exaggerated sound effects. Two *Making of...* featurettes, a gag reel and 13 deleted scenes are also included.



Ghost Story

Second Sight → Region B BD
£20 approx



As much as it may oversimplify the story and themes of Peter Straub's celebrated novel of the same name, something about this 1981 adaptation's unusual combination of Hollywood's old guard, traditional ghostly scares and *Body Heat*-style eroticism make for a fascinating watch. Fans of the film should find plenty to enjoy about this well-specified Blu-ray release. In addition to fine 1.85:1 Full HD visuals and LPCM 2.0 audio, the disc finds space for a director's commentary, a quartet of lengthy interviews, TV and radio spots, the original trailer and a photo gallery.



Sinister 2

Entertainment One → Region B BD
£25 approx



2012's *Sinister* remains one of the more effective and creepy mainstream fright flicks of recent years. Stripped of the ability to surprise viewers, this sequel contents itself with ratcheting up the on-screen sadism, a decision that is sure to keep hardcore horror-hedz interested longer than the by-the-numbers plotting can manage. As you'd expect, impenetrable shadows and sudden noises are the hallmarks of the Blu-ray's 2.40:1 transfer and DTS-HD Master Audio 5.1 soundmix. Extras include a chat-track, a *Making of...* featurette and extended versions of the 'kill films'.



Riding the new wave on Blu-ray

Arrow Academy schools UK film fans on one of Japan's most challenging directors

→ KIJÛ YOSHIDA: LOVE + ANARCHISM

If you like your films to challenge as much as they entertain, then you'll get a kick out of this limited edition boxset collecting three thematically-linked works by one of the leading lights of Japanese 'New Wave' cinema.

Hailed as Yoshida's masterpiece, *Eros + Massacre* (1969) tells two parallel stories, the first based on the life of anarchist and free-love advocate Sakae Ôsugi, the other following two students researching his ideals. Despite being set in two different eras of 20th Century Japan, the intertwining stories begin to inform one another as they explore the relationship between the past, present and future.

The set includes both the original 165-minute theatrical version of *Eros + Massacre*, plus Yoshida's subsequent 216-minute Director's Cut.

If you thought that was heavy going, you clearly haven't seen *Heroic Purgatory* (1970). Yoshida's most avant-garde film, it defies any neat attempt at description in its bleak, dreamlike approach to political discourse in '70s Japan.

Finally, *Coup d'état* (1973) sees Yoshida return to a slightly more straightforward form of storytelling for this biopic of right-wing extremist Ikki Kita, who was implicated in a failed attempt to overthrow the Japanese government in the 1930s.

Picture: The two versions of *Eros + Massacre* get a disc of their own and have very different 2.35:1-framed 1080p encodes. While both have been cleaned up nicely, the theatrical cut was reportedly sourced from a film print and as such isn't quite as



refined as the Director's Cut. The latter version also boasts considerably higher brightness levels that give some scenes an overexposed appearance – something Yoshida himself wanted according to those who worked on the discs.

The shorter *Heroic Purgatory* and *Coup d'état* share the same disc. Both sport a crisp and clean monochromatic appearance that's sympathetic to the filmmaker's original intentions and retain an authentic film-like appearance.

Audio: LPCM mono Japanese audio accompanies each film. Again, these have been cleaned up, with no major issues or anomalies to report.

Extras: The films are accompanied by video intros and commentary from Japanese New Wave expert David Desser on selected scenes. Also included are a half-hour French documentary about Yoshida, trailers for each movie and a 76-page book containing new essays about the director.



HCC VERDICT

Kijû Yoshida: Love + Anarchism

→ Arrow Academy → All-region BD

→ £55 Approx

WE SAY: A superb celebration of one of Japan's most challenging and thought-provoking filmmakers

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★



Sex-bots are for life, not just Xmas

Oddball 1980s genre mash-up enjoys a tasty debut on UK Blu-ray

→ CHERRY 2000

Set in a bureaucratic future where even sexual encounters require contracts to be drawn up by lawyers, business executive Sam Treadwell (David Andrews) is one of a growing number of people to opt for an android lover instead. But when his rare Cherry 2000 (Pamela Gidley) short-circuits, a distraught Sam must venture into the lawless post-apocalyptic wilderness of Zone 7 to find a new model. Aiding him on his quest is Johnson (Melanie Griffith), one of the few trackers capable of guiding Sam to the location of the old android factory and keeping him safe from the deadly gangs that live in the area.

As you can probably tell from the above synopsis, director Steve De Jarnatt's low-budget film is an odd mix of genres that refuses to take itself seriously. Kicking off like a piece of sci-fi social commentary, *Cherry 2000* then undergoes a transformation into a more

action-orientated western, only with a feminist twist that sees Griffith cast as the gun-toting cowboy and Andrews as the 'damsel' in distress. Ultimately, *Cherry 2000* is an enjoyably unusual slice of 1980s sci-fi-action that is ripe for rediscovery.

Picture: *Cherry 2000*'s 1.85:1-framed 1080p encode, while not the most striking HD presentation you'll ever see, maintains a film-like appearance. The source material is in pretty good shape, with the most notable instances of dirt and debris being baked-in to optical effects. There's a handful of



Girls just want to have fun (and a gun)



inherently softer shots, but image clarity is pretty strong with plenty of detail visible in close-ups. Colours and black levels appear accurate throughout.

Audio: The platter's LPCM 2.0 track does an effective job of handling dialogue and Foley effects and keeping them distinct from one another in the mix. The big winner of the lossless upgrade, however, is Basil Poledouris' wonderful score.

Extras: This UK release from newcomer Signal One includes all of the extras that appeared on Kino Lorber's US Blu-ray. These include a director's commentary, an interview with actor Tim Thomerson, a vintage promo video, and a gallery of lobby cards, stills and posters.

HCC VERDICT

Cherry 2000

→ Signal One → Region B BD
→ £15 approx

WE SAY: A satisfying hi-def showcase for this weird and wild 1980s sci-fi-action-comedy

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

Frank Sinatra: 3-Film Collection

Warner Bros. → All-region BD
£25 approx



This low-cost musical triple-pack pulls together two MGM classics that pair Sinatra with Gene Kelly (1945's *Anchors Aweigh* and 1949's *On the Town*), plus the 1964 Rat Pack vehicle *Robin and the 7 Hoods*. Sadly, while Warner Bros. has previously delivered gorgeous restorations of similar titles in the past, none of the transfers here rise above merely average; each demonstrating a distinct lack of shadow detail and grain structure. While the DTS-HD MA mono mixes are rather more satisfying, the audio level on *Anchors Aweigh* is far too low and will have you instantly reaching for your volume control.



River's Edge

Signal One → Region B BD
£15 approx



Tim Hunter's study of apathy and alienation in small-town America follows a group of high schoolers (including a young Keanu Reeves and Crispin Glover) who try to cover up a murder committed by one of their friends. Bleak, unsettling and brilliant, *River's Edge* arrives on BD with an authentically drab (but detailed) AVC-encoded 1.85:1 1080p transfer and a well-presented LPCM presentation of the original mono soundtrack. Extras include a director's commentary, plus an intro and Q&A with Richard Linklater. A further option allows you to play the intro, film and Q&A in sequence without breaks.



The Honeymoon Killers

Arrow Video → Region B BD
£18 approx



It may not have been the first or the last film to recount the true story of 'Lonely Hearts Killers' Raymond Fernandez and Martha Beck, but Leonard Castle's 1969 pulp docudrama is undoubtedly the best of the bunch. This Blu-ray release certainly treats the film with the respect it deserves, offering up a striking black-and-white encode based on a 4K restoration from the original 35mm camera negative. The generous selection of supplementary material includes a 20-page booklet and four fascinating featurettes exploring the film and the true events that inspired it.





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Meet The LindoPlex...

James Lindfield achieved his dream of a dedicated cinema room by converting his garage. Now he's keeping eyes on 4K and Dolby Atmos and kicking back with *Days of Thunder* on Blu-ray



AV-Holic James says it's important his garage cinema feels like part of the house

Introduce yourself...

I'm James Lindfield. I work as a telecoms and IT service manager. I've been an AV addict as long as I can remember. I had a 32in Panasonic CRT crammed into my bedroom. My parents bought me a Bose Acoustimass system while we were on holiday in the United States – I remember cramming it all in a suitcase. And I was the first person in our town to buy a DVD player. Later on my Mum and Dad let me convert a room underneath their garage into a dedicated room with a big rear-projection TV and 5.1 audio. My own first house never allowed me the space, but when me and my wife moved into a bigger place, I always knew I'd get the dedicated room I dreamed of. And a year later, The LindoPlex, as I call it, was born.

So where in your house is The LindoPlex?

The LindoPlex is a garage conversion! It used to be full of junk so it's a good use of the space.

What kit do you have in the system?

The projector is from Epson – an EH-TW6100. It's used with a 100in Elite Screens VMAX2 drop-down electric screen. For the audio I have a Sony STR-DN1040 AVR and the Q Acoustics Q7000i system. Feeding all this are a Panasonic DMP-BDT220 Blu-ray deck, Sony PS4, Sky+HD box (2TB) and an Intel NUC i3, with 8GB RAM, for media-playing duties.

How do you rate the performance?

I'm really chuffed with how it turned out. The picture from the Epson is crisp and feels real; some of the modern OLED

flatscreens can be too crisp and feel a bit fake. The sound encases you in the movie, and is excellent for gaming. I took back a DLP projector as all I could see were rainbows. Epson's 3LCD approach is much better for me.

I had to make some DIY sound-deadening panels as the room felt a bit live. They have really enhanced the audio, after many hours and days spent experimenting with speaker positions and other tweaks. The best thing I did was paint the ceiling and walls in a nice shade of dark grey.

How did you choose the kit?

Initially from reading magazine reviews, then I'd hit the demo rooms, then I'd work out the pricing and go for the option that suited the budget and performance the best. My wife came along with me, but would soon get bored with all the talk of drivers, tweeters, contrast ratios, etc, so I had to make quick decisions before she took the credit card away. Luckily she didn't seem to mind spending a bit more to get the best quality. 'Buy cheap, buy twice,' as they say.

What do friends and family think of the conversion?

They love it! It can get a bit cosy with six people in there, but it's great to get everyone together for a good movie. The popcorn containers and cardboard Coke cups come out for the special 'must-see' flicks.

What's your favourite Blu-ray?

My guilty pleasure has always been *Days of Thunder*. Although, as a teenager, me and my best mate would watch anything with



Before being converted to a movie palace, the LindoPlex was an internal garage filled with what owner James describes as 'junk'



The makeover of the 16.5ft x 8.5ft space included installation of a soundproofed window and dual-layer acoustic soundboard with Green Glue in between

Jean-Claude Van Damme, Steven Seagal or big explosions and action. Oh, and *Bad Boys*!

And what do you use for demos?

It has to be *Avatar* or *Gravity*. The visuals and soundmixes on both Blu-rays are truly awesome. I also love the train station and crash scene on *Super 8*. That really stretches the LindoPlex to its limits.

What's next on your equipment wishlist?

4K, Dolby Atmos, a bigger room – not necessarily in that order. I'm lucky to have the room. I doubt any major upgrades will happen any time soon.

So you're excited by 4K/Ultra HD?

Yes, although I will wait for a drop in price of the technology before considering it. I'm happy with everything about my system at the moment! ■



An Epson LCD projector is mounted on the rear wall – James did audition a DLP PJ, but was distracted by the rainbow effect

There's space in this 8.5ft-wide room for authentic seating

'Sit back and enjoy!'

HCC reader **Patrick Peeters** has a passion for movies, music and memorabilia – and a philosophy of 'If I'm happy, it's good enough.' Here we take a tour of his cinema room

Introduce yourself...

I'm Patrick Peeters. I work as an Aerial Filming Technician/Operator. Previously I've been a rack engineer (camera image control for multicamera television shoots) and a camera crane operator for TV. And for the last two-and-a-half years of that I combined it with working as a projectionist in a multiplex, where

I made the transition from 35mm to DCP (Digital Cinema Package) on 2K Barco PJs, first with an Active 3D system from X-Pand and then Passive 3D from Master Image.

How long have you been an AV-Holic?

For about ten years. I started with a very cheap, plastic 5.1 speaker set, where the subwoofer

was used as the receiver to change the 2.0 input to 5.1 output. I used this with one of the last big Sony CRT televisions, before buying myself a Panasonic Viera because I wanted a plasma for the deep blacks.

Then it all changed when I bought the B&W speakers and the Pioneer hardware. I was unaware of what was available back then, so



This Terminator skull is just one of many items of Patrick's movie memorabilia

The sliding mount was custom-made, allowing a switch from TV to projector viewing – our *Tron* drop-in illustrates the size of the projected image



Our AV-holic works as an Aerial Filming Technician – we assume he doesn't suffer from vertigo...



I was thinking about other speakers just because of the look of them. But I knew I had to go to Alpha High-End (in Antwerp) as they are a specialist store. There I was able to listen to all combinations of speakers and receivers with my own CDs, and they let me do this on my own, just sitting there and listening. And I came to the B&W/Pioneer combination...

Whereabouts is your cinema room?

I'm living on the ground floor of an apartment building, and the movie room is the living room. Besides the AV equipment, furniture, disc rack and film-related decorations there is nothing else, so it doesn't function anymore as a normal living room!

That was fine when living alone. But when my girlfriend came to live with me we decided to make a real living room at the other side of the apartment – now people can sit somewhere when visiting!

What AV kit do you have in your system?

From Panasonic I have a PT-AE700E projector, TH-42PV60EH plasma and DMP-BDT310 Blu-ray player. Then there's a Pioneer DV-696AV DVD/SACD player and VSX-AX4ASI-s receiver. The speakers are the aforementioned Bowers & Wilkins, all from the 600 Series.

There are lots of other accessories in my system, including a ITB Western Digital Live TV Hub, Konig HDMI splitter, cables from Supra, Sommer and Hicon and Vogel's mounts.

What speaker config are you running?

I have a 5.1 array, with the surround left and surround right channels quite near to me due to the limitations of the room.

We love the sliding TV system – where did you get this and how is it controlled?

This is my own invention! I always wanted to be able to watch TV or a film with the PJ from the same seating position with one speaker system. In my first setup I had a ceiling-mounted roll-up screen that came in front of the TV. But with the arrival of the B&W speakers I changed the arrangement in the room 90 degrees and I wanted to use the big wall as a projection surface. Thinking about a lift for the television behind the centre speaker, I soon realised that this would never have worked, and so I came up with the idea of moving the TV when using the PJ. I found this sliding system that didn't look too industrial and is visually acceptable in a room like this. It's normally used for glass sliding doors. The frame I've made myself from DIY materials, in combination with a Vogel's bracket.

I really like the result, and people who see me moving the TV for the first time are always amazed. In the development phase I was once thinking about a motorised rail but that would have never looked as clean as it does now so I kept it manually operated.

You're projecting straight onto a white wall – have you used special paint?

I've used Cine Dream Paint on the wall, but I think a good-quality white paint will do. The wall preparation is not done well, and even worse is the application of the paint. In very bright shots you can see the bands of the different sections of paint I applied each time. But I did it myself so I'm happy.

What's your opinion of the system's performance. What areas, if any, do you think could be improved?

The audio performance is so wonderful. I enjoy it every day that I'm home. Watching TV, listening to soundtrack CDs or watching a movie or concert with the projector... it all goes through the Bowers & Wilkins speakers. I don't think I will ever switch to another brand.

The area that can be improved is the system's overall resolution. At this moment it's only compressed audio and 720p, so I will be upgrading the projector. All the equipment can handle 1080i but for me that is a lesser resolution. But I enjoy the setup so much. Sit back and enjoy! Don't bother with the technical specs.

I would like to point out that I've chosen from the beginning to put all the gear next to the seating position. I can't understand those who have invested in a setup but who put their equipment under the screen so they're always looking at the lights and displays

during a movie. I knew I needed a 15m HDMI cable to achieve this but it was worth the investment because I only see the film and not the gear.

Roughly how much have you spent on the whole room?

Just under €10,000, I think.

What do your friends and family think of the cinema?

People who have watched a movie or enjoyed a short demo seem to like it very much. I love to invite friends over. I'm even able to persuade some people to watch a movie that they wouldn't bother to see when it's on TV because of the bigscreen and surround sound. And a friend even asks for a special VIP combo ticket so she can see a movie and play on my pinball machine afterwards...

Even if the system is only 720p with compressed audio, it's so immersive. Being just less than four metres away from a 142in screen, and with the B&W speakers, really puts you inside a movie.

What's your favourite Blu-ray?

Because I'm a big fan of instrumental film scores, there are a lot of movies I watch for the bigscreen/audio experience and not necessarily because they're my favourite movies. And there are movies I watch a lot because I just love them (but many of them don't exist on BD).

Here's a few: *Tron: Legacy*, *Terminator 2: Judgement Day*, *Transformers*, *Avalon* (DVD), *Thunderheart* (DVD), *Sneakers*, *The Fifth Element*, *John Carter*, *Super 8*, *The Da Vinci Code* and *The Bourne Supremacy*.

Do you ever stream movies?

No. My Western Digital hub is filled with movies but I never watch one from that. I like to stand before my shelf and look for a movie that I want to watch. And I also want to have the extras to watch.

What's your favourite bit of kit?

The Bowers & Wilkins speakers! Listen to them and you'll know why!

What's next on your equipment wishlist, and why?

An Optoma HD30 projector, and a new AVR from Pioneer for uncompressed audio and the Full HD signal path.

Are you excited by 4K and Dolby Atmos?

4K: not really. Especially not for my home cinema room.

Dolby Atmos I compare with 3D images – you are even more immersed in the movie. So I'm very interested to see its evolution for movie theatres and home cinemas. But, again, it's probably not right for my current room ■



The 5.1 array uses B&W 603s on L/R duty

HCC reader **Mike Smith** has kitted out his cinema with in-ceiling speakers for some Dolby Atmos fun...



Reaching for the stars

Introduce yourself...

Hi. My name is Mike Smith, and I work as a trainer for a large manufacturing company.

I first got into home cinema in my early '20s. My system then consisted of a Pioneer CLD-925 LaserDisc player with a Sony Wega TV. The sound was taken care of by a Sony Pro-logic amplifier running the front three

speakers (all Tannoy Mercury models) and then a stereo amplifier was wired up to provide stereo sound for the rear (which were standard Sony stereo speakers). We called it 'Dodgy Digital'.

What kit do you have now?

I have both a flatscreen and projector. The TV

is a 55in Panasonic plasma (the VT65), which is wall-mounted. The projector is a Sony VPL-HW40ES. This fires at my 106in Cyber Grandview screen, which drops down in front of the TV.

The speakers are all from DALI. I have Zensor 7 floorstanders for front left/right, the Ikon Vokal Mk2 centre, Zensor 1 surrounds and

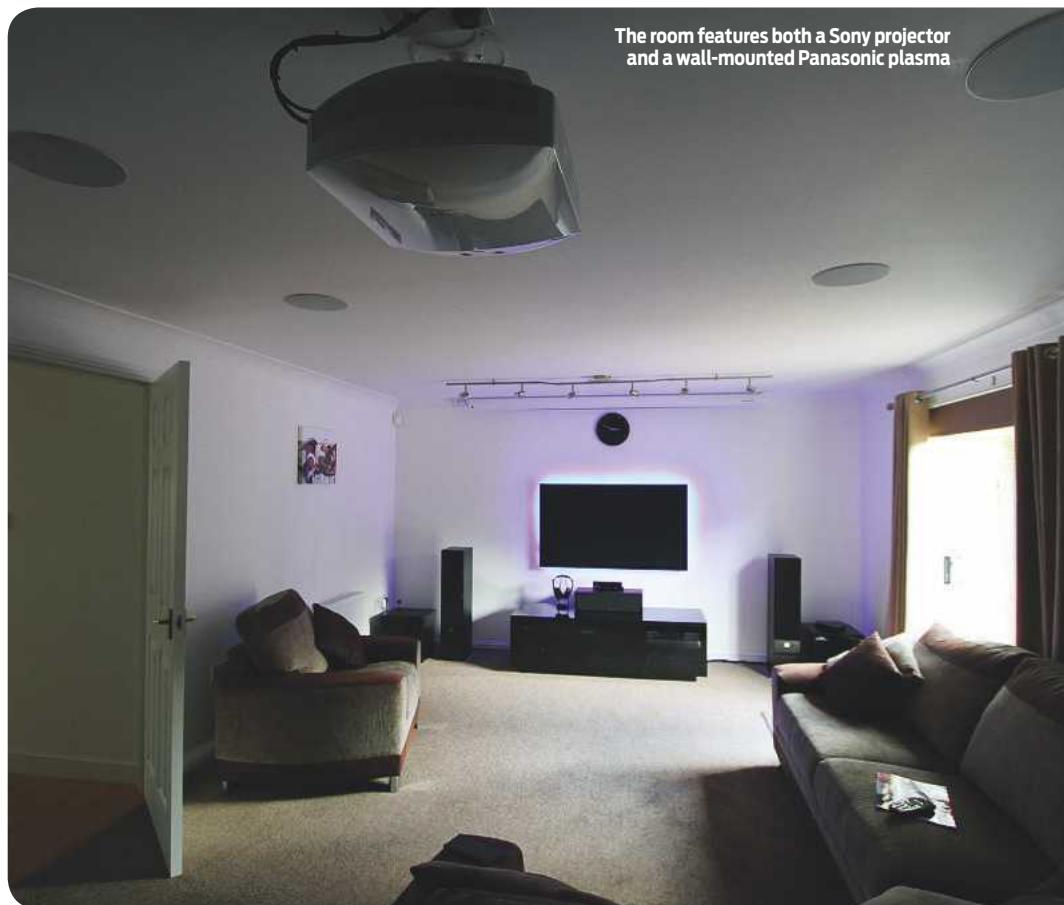


four E-60 in-ceiling speakers. The subwoofer is a Velodyne CHT-10Q.

Everything is going through my new Pioneer SC-LX58 AV receiver. Sitting in my BDI Mirage stand is an Oppo BDP-95 NuForce Edition Blu-ray player, a 2TB Sky+HD box, and Sony PlayStation 4 and Microsoft Xbox One consoles. I also have some Astro A50 gaming headphones.

We love the bias lighting around the TV...

I used a length of LED cabling with a control box, and I also then have a remote control that allows me to change the colour to suit what I'm watching.



The room features both a Sony projector and a wall-mounted Panasonic plasma

So, you have a four height-speaker array for Dolby Atmos. Did anyone help with the installation?

I bought the hardware from Dan at The Movie Rooms in Edinburgh (www.themovierooms.co.uk) and he arranged the installation. The actual install was done by Anderson Installation (www.andersoninstallation.co.uk), who I will say were excellent. The whole project was done in two stages. The Atmos fitout was first, which took a day, and the drop-down screen, etc, took another day a couple of months later.

What's the cinema's performance like?

It's simply staggeringly good. I am over the moon with it. The new amplifier is such a huge step up over my previous one (Pioneer VSX-2021). It's actually a better picture and sound experience than my local cinema! In all honesty, for my budget I don't think there is anything I would have changed.

Roughly how much have you spent on it?

Hmm... probably around the £10,000 mark.

What's next on your equipment wish-list?

Next is an Intel NUC media PC and a Logitech Harmony handset. After that it'll be another subwoofer to join the Velodyne.

What's your favourite bit of kit?

That's a difficult one. I think I would have to say

the Panasonic VT screen as the picture quality just blows me away every time I put on a BD.

What discs do you use when you want to show it off?

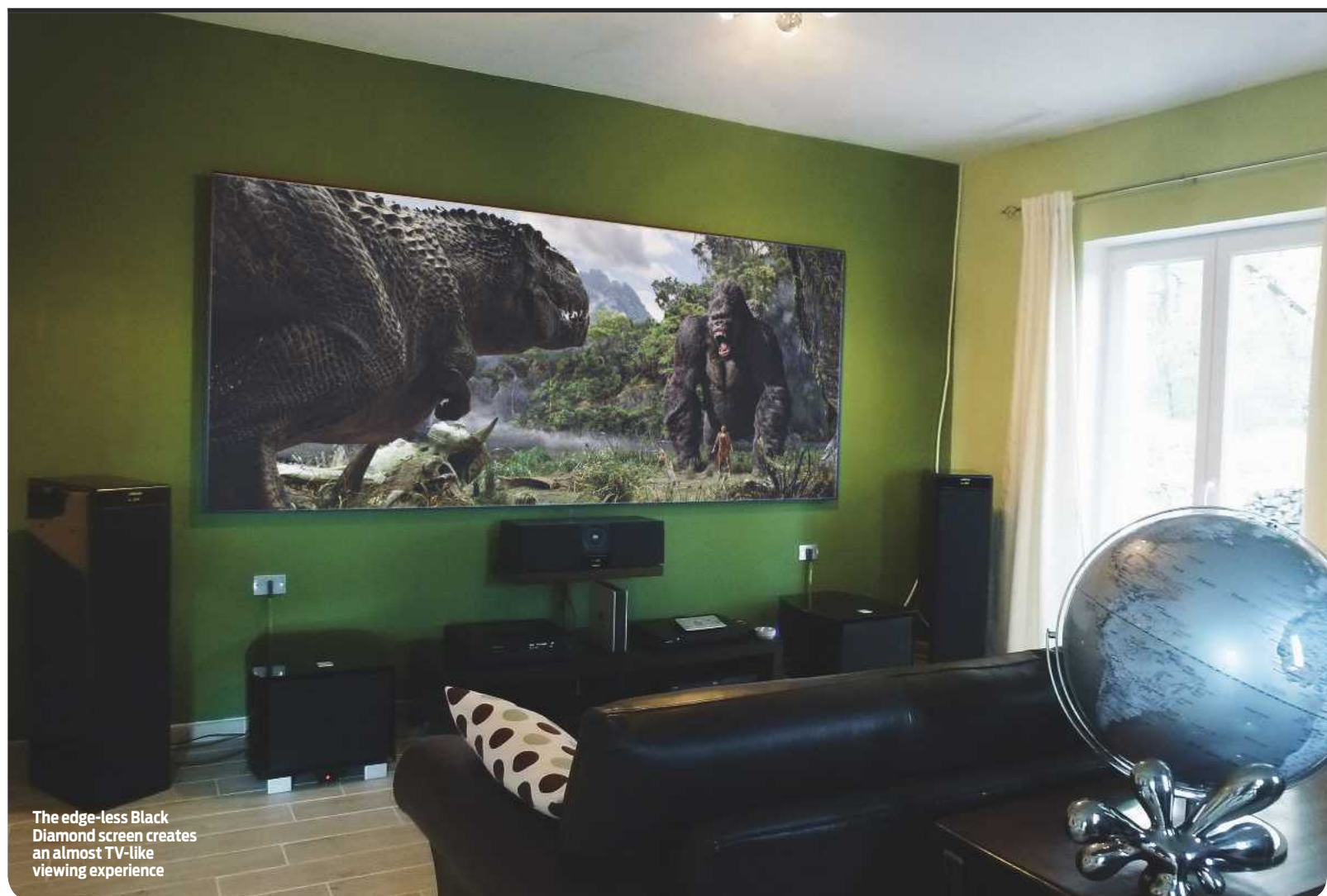
The *Gravity: Diamond Luxe* version (with the Atmos mix) is incredible! I held back

'I'm really impressed by Dolby Atmos and use the upscaling mode for all my Blu-ray movies now'

from watching the film at all until I got the Atmos version and I can honestly say it's one of the best films I've seen. Then, for pure picture quality it has to be Marvel's *Guardians of the Galaxy* or Pixar's *Finding Nemo* – they are always showstoppers!

What's your opinion of Atmos so far?

I'm really impressed by it and I use the upscaling mode for all my discs now as it really does add something extra to the experience. I think the best way to explain Atmos is that when you watch a film there is sound *everywhere*! My only gripe is the lack of Blu-rays still available with Atmos encodes! ■



The edge-less Black Diamond screen creates an almost TV-like viewing experience

Una vista magnifica!

Dual REL subwoofers, Meridian Audio speakers/processing and an eye-catching Zero Edge projector screen – Italy-based reader **Marcus Paisley** throws open the doors to his movie room

Introduce yourself...

Hi everybody! My name is Marcus Paisley. I work in the financial services industry, and have been lucky enough to be living in central Italy for the past two years.

How long have you been an AV-Holic?

Compared to many readers I probably haven't been into home cinema that long! I've been into hi-fi since the late 1990s, which is when I bought my first Meridian setup. Having said that I did buy a 33in 4:3 TV back in the early 1990s and at the time that was a big telly!

That was replaced by a 40in Sony Bravia 16:9 model, which cost £1,800 about a decade ago. We still have it – it gets afternoon use if Aisling (my wife) wants to watch a murder-mystery type show, plus we use it for the Wii.

That was in turn replaced by one of the Philips 21:9 56in TVs in late 2010. At that stage I was running a 3.0 Meridian setup and thanks to the aspect ratio the Philips gave a much larger image for films, which is what we mainly watch. I was thinking 'If this is good, what will a projector and screen be like?'. We sold the Philips when we sold up in the UK and headed out to Italy. We bought the JVC DLA-X70R projector just before we left. As you can tell, our screens have got ever-bigger and ever-wider over time!

Whereabouts is your cinema room?

It's in the main house, so not a dedicated attic or garage space. Most of the ground floor of the house is open-plan so it's simply part of that. Despite the property having a lot of glass

(windows, plus three all-glass external doors on the ground floor, of which two are double width), we have almost total light control thanks to external shutters on all windows, plus black-out blinds within the lined curtains on all windows and doors. So it looks like a normal lounge but acts like a dedicated cinema room. Perfect!

What kit do you currently have?

The video side is handled by a Yamaha BD-A1020 and the JVC projector. The screen is a Screen Innovations Black Diamond Zero Edge one – 129in, 2.35:1 aspect ratio – that I originally read about in *HCC*; I remember it got a gong in your annual awards [*HCC* Accessory of The Year in 2012, actually!]. It came all the

'I think the system is terrific. Image quality with a good Blu-ray is just staggering. It's even good with DVD'

way from the US in a box so the shipping was quite costly! You can imagine the size of the box as it is delivered in one piece, ready to hang. I didn't even audition it – just read the review, looked into it online and ordered it!

Audio is almost all via Meridian hardware. I have a pair of DSP5500 fronts with a DSP5000C centre, a pair of wall-mounted DSP3100s for surrounds, a G61R digital surround processor and an HD621 HDMI box which takes HDMI feeds, splits off the video signal to send it to the projector and sends only the audio to the processor. That's all backed up by a pair of REL Gibraltar 2 subs and a Meridian MC200 500GB hard drive for storing music. Lovely.

I've been into Meridian for close to 20 years and just love it. All the speakers have built-in amps along with D/A converters, etc. They are fabulously powerful and manage to retain great headroom at high volumes which is just how I like it. The Meridian kit certainly isn't 'plug & play', though, and demands either a good dealer to fit it or a deep understanding of how to do it yourself. Without the Meridian Unplugged forum (a source of endless help and advice) and Meridian Oxford I'd have been all at sea.

How do you rate the setup's performance?

I think it's terrific. Image quality with a good Blu-ray is staggering but it's even good with a decent DVD. We sit pretty close to the screen; two-and-a-half metres away, which is about double the screen height, so at that distance it fills a lot of your vision and is really immersive.

The Black Diamond screen is very impressive. It virtually does away with any light

scatter so we can have white ceilings but they look black when a film's playing as the light doesn't get bounced around the room. The screen also has LED back-lighting but we tend not to use that. It also has a lovely minimalist border to it. You don't need big black borders as in use the screen is practically black itself.

Improvements? Speakers higher up the Meridian ladder would always be an improvement! Mine are all relatively old now.

Why did you opt for two subwoofers?

This is another area where I have to thank Unplugged; it wouldn't have occurred to me to buy two subs rather than one, but someone on there had asked the question ('One great sub or two very good ones?') and many were suggesting two. Another specialist dealer that has a presence on the forum (Martins Hi-Fi) set up a demo where they compared one B&W DB1 against two B&W PVI1s and reported that in their room, to their ears, the twin PVI1s gave the better bass response. It's all room/setup-dependent of course, but I'm very happy.

What are your demo discs?

So far I've used *Oblivion*, the T-Rex fight scene from Jackson's *King Kong*, the train crash from

The cinema uses two REL subwoofers



Super 8, the *Ride of The Valkyries* scene from *Apocalypse Now* and *Battleship*. Every one of them is a stunner but there are so many others. Almost any scene from any modern animated film is amazing.

What's your favourite Blu-ray?

Overall favourites in terms of film and the AV experience? Peter Jackson's *King Kong*, *Wall-E*, *Picnic At Hanging Rock*, *Black Hawk Down*, *Alien* and *Aliens*, *Lost In Translation*, the *LotR* trilogy, many Studio Ghibli films, *Spartacus*... I could go on.

And do friends and family love the room?

Everybody really loves it. I think compared to a regular domestic AV setup, it is an awful lot of audio and an awful lot of video! As my brother's wife, Heidi, said: 'I can't believe I'm in someone's living room!' ■

Our AV-Holic has been investing in Meridian Audio hardware since the late 1990s





AV AVENGER

Steve May has had a taste of Dolby Cinema. He now fears his senses will never be satisfied unless he can persuade his family to up sticks and move to the Netherlands

I'VE WITNESSED THE future of movies, and it's called Dolby Cinema. I've been wanting to write that for months, not least because it has a nice ring about it. But with no Dolby Cinemas in the UK, it would at best have been a bit presumptuous. Now I've experienced it, the statement stands. Dolby Cinema is every bit as exhilarating as I'd hoped.

So what exactly is Dolby Cinema? It's basically an amalgamation of Dolby Atmos audio, which needs little introduction here, and Dolby Vision, a 4K laser projection technology.

While we can deploy Atmos at home, this level of HDR imagery is something else entirely. Dolby Cinema uses a Dolby Vision laser projection system able to deliver a contrast of 1,000,000:1 (which in theatrical projection terms is just insane, your local movie house probably taps out at just 2,000:1) and a brightness of 31fL. Its High Dynamic Range images and enhanced colour tech delivers a picture like no cinema image you'll have seen before.

My Dolby Cinema initiation was at Dolby Europe's London screening room, already an exquisite place to catch a movie. The installation was completed just a few days prior to my visit. The first DCP (Digital Cinema Package) to arrive? *The Hunger Games: Mockingjay Part 2*. Fine by me – regular readers will know I'm a sucker for the adventures of Katniss.

In truth, the limited colour palette used by cinematographer Jo Willems proves no great advert for a wider colour gamut. As befits a dystopian fantasy it's all a bit grey and grim. Yet there are plenty of deeply shadowed sequences and night-time panoramas to really show off the system's ability to present detail in low light. One scene involves a terrifying fight with mutant Mutts in the sewers beneath the Capitol City. Prior to a spectacular fire, there's tense huddling in

the shadows. Here the subtle detail is extraordinary, completely uncompromised by bright little lamps. I've seen plenty of HDR demos on panels – often an uncomfortable viewing experience – but here **the balance between absolute black and peak highlights was just perfect.**

And when the screen goes black it truly is utterly ebon. This is OLED-style black. The title and credit crawl – white text on a black background – zings from the screen.

Thankfully, I also got a chance to see just how dazzling the colour space offered by Dolby Vision is, courtesy of a promo short with kaleidoscopic colours – deep greens, neon blues, a real candy-coloured feast. All these incredible visuals are complemented by an Atmos sound mix that's about as immersive as it gets. One particular arrow flight all but trimmed my ear as it flew past.

Time for a road trip?

Unfortunately, there's no news about a Dolby Cinema opening in the UK, but there are some around Europe. The latest can be found at the Cinesa La Maquinista in Spain. Others reside in Hilversum and Eindhoven in the Netherlands.

Movies themselves have to be mastered in the Dolby Cinema format to work in this environment, and the number of titles available is growing. Fifteen have been announced or released, including *Mission Impossible: Rogue Nation*, *In the Heart of the Sea* and *The Jungle Book*. The biggest addition, though, is *Star Wars: The Force Awakens*.

For a while, home cinema appeared to have caught up with commercial theatres. With Dolby Cinema, the gap has widened again. Dammit! ■

Are you hoping Dolby Cinema comes to your local theatre? Let us know: email letters@homecinemachoice.com

Steve May has asked the team at Dolby for his own key to its London screening room but still hasn't heard back from them...





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